

Filename: SINS2.pro  
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Title: SSLS SINS.2 Reflectometer Branchline  
Author: Carl Cork  
Version:  
Description:

|      |  |
|------|--|
| 0001 | PROGRAM Actuator_SM  |
| 0002 |  |
| 0003 | VAR CONSTANT   |
| 0004 | strAddress        : STRING := '192.168.1.11';                              |
| 0005 | wPort             : WORD := 502;   |
| 0006 | bID               : BYTE := 1;   |
| 0007 | tTCP_Timeout: TIME := t#100ms;   |
| 0008 | tTCP_Watchdog   : TIME := t#10s;   |
| 0009 | END_VAR  |
| 0010 | VAR  |
| 0011 | oActuator        : Actuator; (* Actuator control and status object *)      |
| 0012 |  |
| 0013 | uiSuccessful     : UINT; (* total numbers of successful Transfers *)       |
| 0014 | uiFailing        : UINT;      (* total numbers of failing Transfers  *)    |
| 0015 | END_VAR  |
| 0001 | (* Actuator State Machine *)   |
| 0002 | CASE oActuator.wState OF   |
| 0003 | 10: (* RESET: reset connection *)  |
| 0004 | xActuatorReady := FALSE;   |
| 0005 | oActuator.xConnect := FALSE;   |
| 0006 | CONNECT();   |
| 0007 | oActuator.wState := 15;  |
| 0008 |  |
| 0009 | 15: (* INIT: Initialize connection *)                                      |
| 0010 | oActuator.xConnect := TRUE;  |
| 0011 | CONNECT();   |
| 0012 | oActuator.wState := 20;  |
| 0013 |  |
| 0014 | 20: (* CONNECTING: wait for TCP connection*)                               |
| 0015 | CONNECT();   |
| 0016 | IF oActuator.oMBMaster.xIS_CONNECTED THEN                                  |
| 0017 | oActuator.xBusy := FALSE;  |
| 0018 | oActuator.wState := 30;  |
| 0019 | END_IF   |
| 0020 |  |
| 0021 | 30: (* INITIALIZING: wait for servo on *)                                  |
| 0022 | STATUS_READ();   |
| 0023 | IF oActuator.xDataReady THEN   |
| 0024 | (* test for EMGS ON or PWR OFF *)  |
| 0025 | IF (oActuator.awStatus[5].15 OR NOT oActuator.awStatus[5].13 ) THEN        |
| 0026 | (* Wait for this condition to be satisfied *)                              |
| 0027 | oActuator.wState := 30;  |
| 0028 | (* test for ALMH alarm *)  |
| 0029 | ELSIF oActuator.awStatus[5].10 THEN  |
| 0030 | (* try to reset alarm *)   |
| 0031 | oActuator.wState := 31;  |
| 0032 | (* test for SV servo OFF or PEND OFF *)                                    |
| 0033 | ELSIF (NOT oActuator.awStatus[5].12) OR (NOT oActuator.awStatus[5].3) THEN |
| 0034 | (* try to turn on servo *)   |
| 0035 | oActuator.wState := 33;  |
| 0036 | (* test for HEND homing complete *)  |
| 0037 | ELSIF NOT oActuator.awStatus[5].4 THEN                                     |
| 0038 | (* try to HOME motor *)  |
| 0039 | oActuator.wState := 35;  |
| 0040 | ELSE   |
| 0041 | (* ready to receive position commands *)                                   |
| 0042 | oActuator.wState := 40;  |
| 0043 | END_IF   |
| 0044 | END_IF   |
| 0045 |  |
| 0046 | 31: (* ALRS ON: reset alarm *)   |
| 0047 | (* first assert ALRS *)  |
| 0048 | oActuator.wCommand := 16#0100;   |
| 0049 | DRG1_WRITE();  |
| 0050 | IF oActuator.xDataReady THEN   |
| 0051 | (* next step is to clear ALRS flag *)                                      |
| 0052 | oActuator.wState := 32;  |
| 0053 | END_IF   |
| 0054 |  |
| 0055 | 32: (* ALRS OFF: clear flag *)   |
| 0056 | (* clear ALRS flag *)  |
| 0057 | oActuator.wCommand := 16#0000;   |

|      |   |
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| 0058 | DRG1_WRITE();                                 |
| 0059 | IF oActuator.xDataReady THEN                  |
| 0060 | (* finish initialization *)                   |
| 0061 | oActuator.wState := 30;                       |
| 0062 | END_IF  |
| 0063 |   |
| 0064 | 33: (* SON: turn on servo *)                  |
| 0065 | oActuator.wCommand := 16#1000;                |
| 0066 | DRG1_WRITE();                                 |
| 0067 | IF oActuator.xDataReady THEN                  |
| 0068 | (* finish initialization *)                   |
| 0069 | oActuator.wState := 30;                       |
| 0070 | END_IF  |
| 0071 |   |
| 0072 | 35: (* HOME OFF: reset HOME flag *)           |
| 0073 | (* leave SON ON *)                            |
| 0074 | oActuator.wCommand := 16#1000;                |
| 0075 | DRG1_WRITE();                                 |
| 0076 | IF oActuator.xDataReady THEN                  |
| 0077 | (* now set the flag *)                        |
| 0078 | oActuator.wState := 36;                       |
| 0079 | END_IF  |
| 0080 |   |
| 0081 | 36: (* HOME ON: set HOME flag *)              |
| 0082 | (* SON   HOME *)                              |
| 0083 | oActuator.wCommand := 16#1010;                |
| 0084 | DRG1_WRITE();                                 |
| 0085 | IF oActuator.xDataReady THEN                  |
| 0086 | (* wait for HEND *)                           |
| 0087 | oActuator.wState := 37;                       |
| 0088 | END_IF  |
| 0089 |   |
| 0090 | 37: (* HEND: wait for home to finish *)       |
| 0091 | STATUS_READ();                                |
| 0092 | IF oActuator.xDataReady THEN                  |
| 0093 | (* test for HEND *)                           |
| 0094 | IF NOT oActuator.awStatus[5].4 THEN           |
| 0095 | (* not home yet *)                            |
| 0096 | oActuator.wState := 37;                       |
| 0097 | ELSE  |
| 0098 | (* ready to receive position commands *)      |
| 0099 | oActuator.wState := 40;                       |
| 0100 | END_IF  |
| 0101 | END_IF  |
| 0102 |   |
| 0103 | 40: (* IDLING: wait for new destination *)    |
| 0104 | STATUS_READ();                                |
| 0105 | IF oActuator.xDataReady THEN                  |
| 0106 | (* New target? *)                             |
| 0107 | IF wActuatorTarget <> wActuatorPosition THEN  |
| 0108 | (* update target *)                           |
| 0109 | PCMD_WRITE();                                 |
| 0110 | xActuatorReady := FALSE;                      |
| 0111 | oActuator.wState := 50;                       |
| 0112 | ELSE  |
| 0113 | (* continue idling *)                         |
| 0114 | STATUS_READ();                                |
| 0115 | xActuatorReady := TRUE;                       |
| 0116 | oActuator.wState := 40;                       |
| 0117 | END_IF  |
| 0118 | END_IF  |
| 0119 |   |
| 0120 | 50: (* STARTING: set new target position*)    |
| 0121 | PCMD_WRITE();                                 |
| 0122 | IF oActuator.xDataReady THEN                  |
| 0123 | (* started, now test for motion complete *)   |
| 0124 | STATUS_READ();                                |
| 0125 | oActuator.wState := 60;                       |
| 0126 | END_IF  |
| 0127 |   |
| 0128 | 60: (* MOVING: wait until move is completed*) |
| 0129 | STATUS_READ();                                |
| 0130 | IF oActuator.xDataReady THEN                  |

|      |                                   |
|------|-----------------------------------|
| 0131 | (* wStatus & PEND ? *)            |
| 0132 | IF oActuator.awStatus[5].3 THEN   |
| 0133 | (* Move complete, goto IDLING *)  |
| 0134 | uiSuccessful := uiSuccessful + 1; |
| 0135 | STATUS_READ();                    |
| 0136 | oActuator.wState := 40;           |
| 0137 | ELSE                              |
| 0138 | (* Still moving, test again *)    |
| 0139 | STATUS_READ();                    |
| 0140 | oActuator.wState := 60;           |
| 0141 | END_IF                            |
| 0142 | END_IF                            |
| 0143 |                                   |
| 0144 | ELSE (* Should never get here *)  |
| 0145 | oActuator.xConnect := FALSE;      |
| 0146 | oActuator.wState := 10;           |
| 0147 | END_CASE                          |

CONNECT (ST)

|      |   |
|------|---|
| 0001 | (* CONNECT *)   |
| 0002 | (* initiate TCP connection *)   |
| 0003 |   |
| 0004 | (* Delay before initiating connection *)  |
| 0005 | (*BEGDEBUG oActuator.tonConnect(IN := oActuator.xConnect, PT := DWORD_TO_TIME((BYTE_TO_DWORD(bID) * 100))); |
| 0006 | oActuator.tonConnect(IN := oActuator.xConnect, PT := t#100ms);  |
| 0007 |   |
| 0008 | (* Connect *)   |
| 0009 | oActuator.xSend := FALSE;   |
| 0010 | oActuator.oMBMaster(  |
| 0011 | xCONNECT              := oActuator.tonConnect.Q,  |
| 0012 | strIP_ADDRESS         := strAddress,  |
| 0013 | wPORT                 := wPort,   |
| 0014 | bUNIT_ID              := bID,   |
| 0015 | bFUNCTION_CODE       := 16#03,              (*ReadHoldingCoils*)  |
| 0016 | wREAD_ADDRESS:= 16#9000,  |
| 0017 | wREAD_QUANTITY       := 10,   |
| 0018 | ptREAD_DATA           := ADR(oActuator.awStatus[0]),  |
| 0019 | wWRITE_ADDRESS       := 0,  |
| 0020 | wWRITE_QUANTITY       := 0,   |
| 0021 | ptSEND_DATA           := 0,   |
| 0022 | tTIME_OUT             := tTCP_Timeout,  |
| 0023 | tCON_WATCHDOG        := tTCP_Watchdog,  |
| 0024 | xSEND                 := oActuator.xSend  |
| 0025 | );  |
| 0026 |   |
| 0027 | (* Test for connection error *)   |
| 0028 | IF oActuator.oMBMaster.wError <> 0 THEN   |
| 0029 | (* error, return to RESET *)  |
| 0030 | uiFailing := uiFailing + 1;   |
| 0031 | oActuator.xConnect := FALSE;  |
| 0032 | oActuator.wState := 10;   |
| 0033 | END_IF  |

ENDDEBUG\* )

DRG1\_WRITE (ST)

|      |                                      |                            |                         |
|------|--------------------------------------|----------------------------|-------------------------|
| 0001 | (* DRG1_WRITE*)                      |                            |                         |
| 0002 | (* Write to DRG1 command register *) |                            |                         |
| 0003 |                                      |                            |                         |
| 0004 | (* check for start condition *)      |                            |                         |
| 0005 | IF NOT oActuator.xBusy THEN          |                            |                         |
| 0006 | oActuator.xBusy                      | := TRUE;                   |                         |
| 0007 | oActuator.xSend                      | := TRUE;                   |                         |
| 0008 | END_IF                               |                            |                         |
| 0009 |                                      |                            |                         |
| 0010 | (* set DRG1 command register *)      |                            |                         |
| 0011 | oActuator.OMBMaster(                 |                            |                         |
| 0012 | xCONNECT                             | := oActuator.tonConnect.Q, |                         |
| 0013 | strIP_ADDRESS                        | := strAddress,             |                         |
| 0014 | wPORT                                | := wPort,                  |                         |
| 0015 | bUNIT_ID                             | := bID,                    |                         |
| 0016 | bFUNCTION_CODE                       | := 16#06,                  | (*WriteSingleRegister*) |
| 0017 | wREAD_ADDRESS:=                      | 0,                         |                         |
| 0018 | wREAD_QUANTITY                       | := 0,                      |                         |
| 0019 | ptREAD_DATA                          | := 0,                      |                         |
| 0020 | wWRITE_ADDRESS                       | := 16#0D00,                |                         |

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0021     WRITE_QUANTITY      := 1,
0022     ptSEND_DATA         := ADDR(oActuator.wCommand),
0023     tTIME_OUT           := tTCP_Timeout,
0024     tCON_WATCHDOG       := tTCP_Watchdog,
0025     xSEND               := oActuator.xSend
0026 );
0027
0028 (* Test for transaction complete *)
0029 IF oActuator.oMBMaster.wError <> 0 THEN
0030     (* error, return to INIT *)
0031     uiFailing := uiFailing + 1;
0032     oActuator.xConnect := FALSE;
0033     oActuator.xBusy := FALSE;
0034     oActuator.xDataReady := FALSE;
0035     oActuator.wState := 10;
0036 ELSEIF NOT oActuator.xSend THEN
0037     oActuator.xBusy := FALSE;
0038     oActuator.xDataReady := TRUE;
0039 ELSE
0040     oActuator.xDataReady := FALSE;
0041 END_IF

PCMD_WRITE (ST)
0001 (* PCMD_WRITE *)
0002 (* Write to PCMD target position register *)
0003
0004 (* check for start condition *)
0005 IF NOT oActuator.xBusy THEN
0006     oActuator.wTarget := wActuatorTarget;
0007     oActuator.xBusy := TRUE;
0008     oActuator.xSend := TRUE;
0009 END_IF
0010
0011 (* set PCMD target position *)
0012 oActuator.oMBMaster(
0013     xCONNECT      := oActuator.tonConnect.Q,
0014     strIP_ADDRESS := strAddress,
0015     wPORT         := wPort,
0016     bUNIT_ID      := bID,
0017     bFUNCTION_CODE := 16#06,          (*WriteSingleRegister*)
0018     wREAD_ADDRESS := 0,
0019     wREAD_QUANTITY := 0,
0020     ptREAD_DATA    := 0,
0021     wWRITE_ADDRESS := 16#9901,
0022     wWRITE_QUANTITY := 1,
0023     ptSEND_DATA    := ADDR(oActuator.wTarget),
0024     tTIME_OUT      := tTCP_Timeout,
0025     tCON_WATCHDOG  := tTCP_Watchdog,
0026     xSEND          := oActuator.xSend
0027 );
0028
0029 (* Test for transaction complete *)
0030 IF oActuator.oMBMaster.wError <> 0 THEN
0031     (* error, return to RESET *)
0032     uiFailing := uiFailing + 1;
0033     oActuator.xConnect := FALSE;
0034     oActuator.xBusy := FALSE;
0035     oActuator.xDataReady := FALSE;
0036     oActuator.wState := 10;
0037 ELSEIF NOT oActuator.xSend THEN
0038     oActuator.xBusy := FALSE;
0039     oActuator.xDataReady := TRUE;
0040 ELSE
0041     oActuator.xDataReady := FALSE;
0042 END_IF

STATUS_READ (ST)
0001 (* STATUS_READ *)
0002 (* read status registers PNOW thru STAT *)
0003
0004 (* check for start condition *)
0005 IF NOT oActuator.xBusy THEN
0006     oActuator.xBusy := TRUE;
0007     oActuator.xSend := TRUE;

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|                  |  |
|------------------|--|
| 0008             | END_IF   |
| 0009             |  |
| 0010             | (* Get actuator status words *)                                  |
| 0011             | oActuator.oMBMaster(   |
| 0012             | xCONNECT              := oActuator.tonConnect.Q,                 |
| 0013             | strIP_ADDRESS         := strAddress,                             |
| 0014             | wPORT                 := wPort,                                  |
| 0015             | bUNIT_ID              := bID,                                    |
| 0016             | bFUNCTION_CODE       := 16#03,              (*ReadHoldingCoils*) |
| 0017             | wREAD_ADDRESS:= 16#9000,   |
| 0018             | wREAD_QUANTITY       := 10,                                      |
| 0019             | ptREAD_DATA           := ADR(oActuator.awStatus[0]),             |
| 0020             | wWRITE_ADDRESS        := 0,                                      |
| 0021             | wWRITE_QUANTITY       := 0,                                      |
| 0022             | ptSEND_DATA           := 0,                                      |
| 0023             | tTIME_OUT             := tTCP_Timeout,                           |
| 0024             | tCON_WATCHDOG         := tTCP_Watchdog,                          |
| 0025             | xSEND                 := oActuator.xSend                         |
| 0026             | );   |
| 0027             |  |
| 0028             | (* Test for transaction complete *)                              |
| 0029             | IF oActuator.oMBMaster.wError <> 0 THEN                          |
| 0030             | (* error, return to RESET *)                                     |
| 0031             | uiFailing := uiFailing + 1;                                      |
| 0032             | oActuator.xConnect := FALSE;                                     |
| 0033             | oActuator.xBusy := FALSE;  |
| 0034             | oActuator.xDataReady := FALSE;                                   |
| 0035             | oActuator.wState := 10;  |
| 0036             | ELSIF NOT oActuator.xSend THEN                                   |
| 0037             | wActuatorPosition := oActuator.awStatus[1];                      |
| 0038             | wActuatorAlarm := oActuator.awStatus[2];                         |
| 0039             | wActuatorStatus := oActuator.awStatus[5];                        |
| 0040             | oActuator.xBusy := FALSE;  |
| 0041             | oActuator.xDataReady := TRUE;                                    |
| 0042             | ELSE   |
| 0043             | oActuator.xDataReady := FALSE;                                   |
| 0044             | END_IF   |
| PLC_PRG (PRG-ST) |  |
| 0001             | PROGRAM PLC_PRG  |
| 0002             | VAR CONSTANT   |
| 0003             | (* Version control *)  |
| 0004             | cVERSION_MAJOR : WORD := 0;    (* Version major index *)         |
| 0005             | cVERSION_MINOR : WORD := 1;    (* Version minor index *)         |
| 0006             |  |
| 0007             | (* BR_SELECTOR indexes *)  |
| 0008             | cSINS01 : WORD := 1;    (* SINS.1 branchline *)                  |
| 0009             | cSINS02 : WORD := 2;    (* SINS.2 branchline *)                  |
| 0010             | cSINS03 : WORD := 3;    (* SINS.3 branchline *)                  |
| 0011             | cYAG : WORD := 4;    (* YAG screen *)                            |
| 0012             |  |
| 0013             | (* Actuator Limits *)  |
| 0014             | cBR_SELECTOR_UL : WORD := 10000;                                 |
| 0015             | cACTUATOR_TARGET: ARRAY [1..4] OF WORD := 0,9566,2500,7225;      |
| 0016             | END_VAR  |
| 0017             |  |
| 0018             | VAR  |
| 0019             | (* ***** Supervisory Control ***** *)                            |
| 0020             | (* PFC_OUT DISCRETES *)  |
| 0021             | (* %MX0.0 .. %MX639.15 *)  |
| 0022             | SC_RESET_REQUIRED AT %MX0.0:BOOL;                                |
| 0023             | (* 1 SPARE *)  |
| 0024             | SC_ATB AT %MX0.2: BOOL := TRUE;                                  |
| 0025             | SC_AFB AT %MX0.3: BOOL := FALSE;                                 |
| 0026             | (* 4 SPARE *)  |
| 0027             |  |
| 0028             | SC_PE101_PSL AT %MX0.8:BOOL;                                     |
| 0029             | SC_PE201_PSL AT %MX0.9:BOOL;                                     |
| 0030             | SC_PE202_PSL AT %MX0.10:BOOL;                                    |
| 0031             | (* 1 SPARE *)  |
| 0032             |  |
| 0033             | SC_RP2110_AT_SPEED AT %MX0.12:BOOL;                              |
| 0034             | SC_RP2111_AT_SPEED AT %MX0.13:BOOL;                              |
| 0035             | SC_PE2110_PSL AT %MX0.14:BOOL;                                   |



|      |   |
|------|---|
| 0036 | SC_PE2111_PSL AT %MX0.15:BOOL;          |
| 0037 |   |
| 0038 | SC_PE203_OK AT %MX1.0:BOOL;             |
| 0039 | SC_PE203_PSL_HI AT %MX1.1:BOOL;         |
| 0040 | SC_PE203_PSL_MIDHI AT %MX1.2:BOOL;      |
| 0041 | SC_PE203_PSL_MIDLO AT %MX1.3:BOOL;      |
| 0042 | SC_PE203_PSL_LO AT %MX1.4:BOOL;         |
| 0043 | (* 3 SPARE *)                           |
| 0044 |   |
| 0045 | SC_PE211_OK AT %MX1.8:BOOL;             |
| 0046 | SC_PE211_PSL_HI AT %MX1.9:BOOL;         |
| 0047 | SC_PE211_PSL_MIDHI AT %MX1.10:BOOL;     |
| 0048 | SC_PE211_PSL_MIDLO AT %MX1.11:BOOL;     |
| 0049 | SC_PE211_PSL_LO AT %MX1.12:BOOL;        |
| 0050 | (* 3 SPARE *)                           |
| 0051 |   |
| 0052 | SC_PE212_OK AT %MX2.0:BOOL;             |
| 0053 | SC_PE212_PSL_HI AT %MX2.1:BOOL;         |
| 0054 | SC_PE212_PSL_MIDHI AT %MX2.2:BOOL;      |
| 0055 | SC_PE212_PSL_MIDLO AT %MX2.3:BOOL;      |
| 0056 | SC_PE212_PSL_LO AT %MX2.4:BOOL;         |
| 0057 | (* 3 SPARE *)                           |
| 0058 |   |
| 0059 | SC_LL211_LID_CLOSED AT %MX2.8:BOOL;     |
| 0060 | SC_LL211_ARM_RETRACTED AT %MX2.9:BOOL;  |
| 0061 | (* 6 SPARE *)                           |
| 0062 |   |
| 0063 | SC_V100_OPEN AT %MX3.0:BOOL;            |
| 0064 | SC_V100_CLOSED AT %MX3.1:BOOL;          |
| 0065 | (* 6 SPARE *)                           |
| 0066 |   |
| 0067 | SC_V101_BEAM_PASS AT %MX3.8:BOOL;       |
| 0068 | SC_V101_OPEN AT %MX3.9:BOOL;            |
| 0069 | SC_V101_CLOSED AT %MX3.10:BOOL;         |
| 0070 | SC_V101_OPEN_PERMIT AT %MX3.11:BOOL;    |
| 0071 | SC_V101_CLOSE_PERMIT AT %MX3.12:BOOL;   |
| 0072 | SC_V101_OPEN_CMD AT %MX3.13:BOOL;       |
| 0073 | SC_V101_NOT_SYMBOL AT %MX3.14:BOOL;     |
| 0074 | (* 1 SPARE *)                           |
| 0075 |   |
| 0076 | SC_V201_BEAM_PASS AT %MX4.0 : BOOL;     |
| 0077 | SC_V201_OPEN AT %MX4.1 : BOOL;          |
| 0078 | SC_V201_CLOSED AT %MX4.2 : BOOL;        |
| 0079 | SC_V201_OPEN_PERMIT AT %MX4.3 : BOOL;   |
| 0080 | SC_V201_CLOSE_PERMIT AT %MX4.4 : BOOL;  |
| 0081 | SC_V201_OPEN_CMD AT %MX4.5 : BOOL;      |
| 0082 | SC_V201_NOT_SYMBOL AT %MX4.6:BOOL;      |
| 0083 | (* 1 SPARE *)                           |
| 0084 |   |
| 0085 | SC_V202_OPEN AT %MX4.8 : BOOL;          |
| 0086 | SC_V202_CLOSED AT %MX4.9 : BOOL;        |
| 0087 | SC_V202_BEAM_PASS AT %MX4.10 : BOOL;    |
| 0088 | (* 5 SPARE *)                           |
| 0089 |   |
| 0090 | SC_V203_BEAM_PASS AT %MX5.0 : BOOL;     |
| 0091 | SC_V203_OPEN AT %MX5.1 : BOOL;          |
| 0092 | SC_V203_CLOSED AT %MX5.2 : BOOL;        |
| 0093 | SC_V203_OPEN_PERMIT AT %MX5.3 : BOOL;   |
| 0094 | SC_V203_CLOSE_PERMIT AT %MX5.4 : BOOL;  |
| 0095 | SC_V203_OPEN_CMD AT %MX5.5 : BOOL;      |
| 0096 | SC_V203_NOT_SYMBOL AT %MX5.6:BOOL;      |
| 0097 | (* 1 SPARE *)                           |
| 0098 |   |
| 0099 | SC_V204_BEAM_PASS AT %MX5.8 : BOOL;     |
| 0100 | SC_V204_OPEN AT %MX5.9 : BOOL;          |
| 0101 | SC_V204_CLOSED AT %MX5.10 : BOOL;       |
| 0102 | SC_V204_OPEN_PERMIT AT %MX5.11 : BOOL;  |
| 0103 | SC_V204_CLOSE_PERMIT AT %MX5.12 : BOOL; |
| 0104 | SC_V204_OPEN_CMD AT %MX5.13 : BOOL;     |
| 0105 | SC_V204_NOT_SYMBOL AT %MX5.14:BOOL;     |
| 0106 | (* 1 SPARE *)                           |
| 0107 |   |
| 0108 | (* 1 SPARE *)                           |
|      |   |

|      |   |
|------|---|
| 0109 | SC_RPV211_OPEN AT %MX6.1 : BOOL;            |
| 0110 | SC_RPV211_CLOSED AT %MX6.2 : BOOL;          |
| 0111 | (* 2 SPARE *)                               |
| 0112 | SC_RPV211_OPEN_CMD AT %MX6.5 : BOOL;        |
| 0113 | (* 2 SPARE *)                               |
| 0114 |   |
| 0115 | (* 3 SPARE *)                               |
| 0116 | SC_VENT211_SLOW_CMD AT %MX6.11 : BOOL;      |
| 0117 | SC_VENT211_FAST_CMD AT %MX6.12 : BOOL;      |
| 0118 | (* 3 SPARE *)                               |
| 0119 |   |
| 0120 | (* 1 SPARE *)                               |
| 0121 | SC_TPV211_OPEN AT %MX7.1 : BOOL;            |
| 0122 | SC_TPV211_CLOSED AT %MX7.2 : BOOL;          |
| 0123 | (* 2 SPARE *)                               |
| 0124 | SC_TPV211_OPEN_CMD AT %MX7.5 : BOOL;        |
| 0125 | (* 2 SPARE *)                               |
| 0126 |   |
| 0127 | (* 1 SPARE *)                               |
| 0128 | SC_SLOTV211_OPEN AT %MX7.9 : BOOL;          |
| 0129 | SC_SLOTV211_CLOSED AT %MX7.10 : BOOL;       |
| 0130 | SC_SLOTV211_OPEN_PERMIT AT %MX7.11 : BOOL;  |
| 0131 | SC_SLOTV211_CLOSE_PERMIT AT %MX7.12 : BOOL; |
| 0132 | SC_SLOTV211_OPEN_CMD AT %MX7.13 : BOOL;     |
| 0133 | SC_SLOTV211_CLOSE_CMD AT %MX7.14 : BOOL;    |
| 0134 | SC_SLOTV211_NOT_SYMBOL AT %MX7.15:BOOL;     |
| 0135 |   |
| 0136 | (* 1 SPARE *)                               |
| 0137 | SC_RPV212_OPEN AT %MX8.1 : BOOL;            |
| 0138 | SC_RPV212_CLOSED AT %MX8.2 : BOOL;          |
| 0139 | (* 2 SPARE *)                               |
| 0140 | SC_RPV212_OPEN_CMD AT %MX8.5 : BOOL;        |
| 0141 | (* 2 SPARE *)                               |
| 0142 |   |
| 0143 | (* 3 SPARE *)                               |
| 0144 | SC_VENT212_SLOW_CMD AT %MX8.11 : BOOL;      |
| 0145 | SC_VENT212_FAST_CMD AT %MX8.12 : BOOL;      |
| 0146 | (* 3 SPARE *)                               |
| 0147 |   |
| 0148 | (* 1 SPARE *)                               |
| 0149 | SC_TPV212_OPEN AT %MX9.1 : BOOL;            |
| 0150 | SC_TPV212_CLOSED AT %MX9.2 : BOOL;          |
| 0151 | (* 2 SPARE *)                               |
| 0152 | SC_TPV212_OPEN_CMD AT %MX9.5 : BOOL;        |
| 0153 | (* 2 SPARE *)                               |
| 0154 |   |
| 0155 | SC_RP2110_ON AT %MX9.8 : BOOL;              |
| 0156 | SC_RP2110_ON_CMD AT %MX9.9 : BOOL;          |
| 0157 | (* 6 SPARE *)                               |
| 0158 |   |
| 0159 | SC_RP2111_ON AT %MX10.0 : BOOL;             |
| 0160 | SC_RP2111_ON_CMD AT %MX10.1 : BOOL;         |
| 0161 | (* 3 SPARE *)                               |
| 0162 | SC_TP201_VENT_ENABLE_CMD AT %MX10.5 : BOOL; |
| 0163 | SC_TP201_VENT_NOT_SYMBOL AT %MX10.6 : BOOL; |
| 0164 | (* 1 SPARE *)                               |
| 0165 |   |
| 0166 | SC_TP201_OK AT %MX10.8 : BOOL;              |
| 0167 | SC_TP201_ON AT %MX10.9 : BOOL;              |
| 0168 | SC_TP201_OFF AT %MX10.10 : BOOL;            |
| 0169 | SC_TP201_ON_PERMIT AT %MX10.11 : BOOL;      |
| 0170 | SC_TP201_OFF_PERMIT AT %MX10.12 : BOOL;     |
| 0171 | SC_TP201_ON_CMD AT %MX10.13 : BOOL;         |
| 0172 | SC_TP201_NOT_SYMBOL AT %MX10.14:BOOL;       |
| 0173 | (* 1 SPARE *)                               |
| 0174 |   |
| 0175 | SC_TP211_OK AT %MX11.0 : BOOL;              |
| 0176 | SC_TP211_ON AT %MX11.1 : BOOL;              |
| 0177 | SC_TP211_OFF AT %MX11.2 : BOOL;             |
| 0178 | (* 5 SPARE *)                               |
| 0179 |   |
| 0180 | SC_TP212_OK AT %MX11.8 : BOOL;              |
| 0181 | SC_TP212_ON AT %MX11.9 : BOOL;              |
|      |   |

|      |  |
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| 0182 | SC_TP212_OFF AT %MX11.10 : BOOL;               |
| 0183 | (* 5 SPARE *)                                  |
| 0184 |  |
| 0185 | SC_LL_ACTUATOR_OK AT %MX12.0 : BOOL;           |
| 0186 | SC_LL_PE101_PSL AT %MX12.1 : BOOL;             |
| 0187 | SC_LL_PE201_PSL AT %MX12.2 : BOOL;             |
| 0188 | SC_LL_V202_OPN AT %MX12.3 : BOOL;              |
| 0189 | SC_LL_PE202_PSL AT %MX12.4 : BOOL;             |
| 0190 | SC_LL_PE203_OK AT %MX12.5 : BOOL;              |
| 0191 | SC_LL_PE203_PSL_LO AT %MX12.6 : BOOL;          |
| 0192 | SC_LL_TP201_OK AT %MX12.7 : BOOL;              |
| 0193 | (* 8 SPARE *)                                  |
| 0194 |  |
| 0195 | SC_LL_ES_CONFIG_OK AT %MX13.0 : BOOL;          |
| 0196 | SC_LL_LL_CONFIG_OK AT %MX13.1 : BOOL;          |
| 0197 | SC_LL_PE211_OK AT %MX13.2 : BOOL;              |
| 0198 | SC_LL_PE212_OK AT %MX13.3 : BOOL;              |
| 0199 | SC_LL_RP2111_ON AT %MX13.4 : BOOL;             |
| 0200 | SC_LL_PE2111_PSL AT %MX13.5 : BOOL;            |
| 0201 | SC_LL_TP211_TURBO_OK AT %MX13.6 : BOOL;        |
| 0202 | SC_LL_TP212_TURBO_OK AT %MX13.7 : BOOL;        |
| 0203 | SC_LL_PE2111_PSL_ES AT %MX13.8 : BOOL;         |
| 0204 | SC_LL_PE2111_PSL_LL AT %MX13.9 : BOOL;         |
| 0205 | (* 6 SPARE *)                                  |
| 0206 |  |
| 0207 | (* PFC_IN DISCRETES *)                         |
| 0208 | (* %MX640.0 .. %MX1279.15 *)                   |
| 0209 | SC_RESET_REQ AT %MX640.0 : BOOL;               |
| 0210 | (* 15 SPARE *)                                 |
| 0211 |  |
| 0212 | SC_V101_OPN_REQ AT %MX641.0 : BOOL;            |
| 0213 | SC_V101_CLS_REQ AT %MX641.1 : BOOL;            |
| 0214 | SC_V201_OPN_REQ AT %MX641.2 : BOOL;            |
| 0215 | SC_V201_CLS_REQ AT %MX641.3 : BOOL;            |
| 0216 | (* 2 RESERVED *)                               |
| 0217 | SC_V203_OPN_REQ AT %MX641.6 : BOOL;            |
| 0218 | SC_V203_CLS_REQ AT %MX641.7 : BOOL;            |
| 0219 | SC_V204_OPN_REQ AT %MX641.8 : BOOL;            |
| 0220 | SC_V204_CLS_REQ AT %MX641.9 : BOOL;            |
| 0221 | SC_TP201_ON_REQ AT %MX641.10 : BOOL;           |
| 0222 | SC_TP201_OFF_REQ AT %MX641.11 : BOOL;          |
| 0223 | SC_TP201_VENT_ENABLE_REQ AT %MX641.12 : BOOL;  |
| 0224 | SC_TP201_VENT_DISABLE_REQ AT %MX641.13 : BOOL; |
| 0225 | (* 2 SPARE *)                                  |
| 0226 |  |
| 0227 | SC_SLOTV211_OPN_REQ AT %MX642.0 : BOOL;        |
| 0228 | SC_SLOTV211_CLS_REQ AT %MX642.1 : BOOL;        |
| 0229 | (* 14 SPARE *)                                 |
| 0230 |  |
| 0231 | (* PFC_OUT WORDs *)                            |
| 0232 | (* %MW1280 .. %MW3711 *)                       |
| 0233 | (* Version Numbers *)                          |
| 0234 | SC_VERSION_MAJOR AT %MW1280 : WORD;            |
| 0235 | SC_VERSION_MINOR AT %MW1281 : WORD;            |
| 0236 | (* 2 RESERVED *)                               |
| 0237 |  |
| 0238 | (* Analog vacuum pressure *)                   |
| 0239 | SC_PE101_PII AT %MW1284 : WORD;                |
| 0240 | SC_PE201_PII AT %MW1285 : WORD;                |
| 0241 | SC_PE202_PII AT %MW1286 : WORD;                |
| 0242 | SC_PE203_HI_PII AT %MW1287 : WORD;             |
| 0243 | SC_PE203_LO_PII AT %MW1288 : WORD;             |
| 0244 | SC_PE211_HI_PII AT %MW1289 : WORD;             |
| 0245 | SC_PE211_LO_PII AT %MW1290 : WORD;             |
| 0246 | SC_PE212_HI_PII AT %MW1291 : WORD;             |
| 0247 | SC_PE212_LO_PII AT %MW1292 : WORD;             |
| 0248 | (* 3 SPARE *)                                  |
| 0249 |  |
| 0250 | (* State Machine current command values *)     |
| 0251 | SC_BR_CMD_VAL AT %MW1296 : WORD;               |
| 0252 | SC_ES_CMD_VAL AT %MW1297 : WORD;               |
| 0253 | SC_LL_CMD_VAL AT %MW1298 : WORD;               |
| 0254 | (* 5 SPARE *)                                  |

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| 0255 |  |
| 0256 | (* State Machine current values *)           |
| 0257 | SC_BR_STATE AT %MW1304 : WORD;               |
| 0258 | SC_ES_STATE AT %MW1305 : WORD;               |
| 0259 | SC_LL_STATE AT %MW1306 : WORD;               |
| 0260 | (* 5 SPARE *)                                |
| 0261 |  |
| 0262 |  |
| 0263 | (* PFC_IN WORDs *)                           |
| 0264 | (* %MW3712 .. %MW4927 *)                     |
| 0265 | (* State Machine current command requests *) |
| 0266 | SC_BR_CMD_REQ AT %MW3712 : WORD;             |
| 0267 | SC_ES_CMD_REQ AT %MW3713 : WORD;             |
| 0268 | SC_LL_CMD_REQ AT %MW3714 : WORD;             |
| 0269 | (* 5 SPARE *)                                |
| 0270 |  |
| 0271 |  |
| 0272 |  |
| 0273 | (* ***** Internal Variables ***** *)         |
| 0274 | count : BYTE;                                |
| 0275 | count2 : BYTE;                               |
| 0276 | a_num : BYTE;                                |
| 0277 |  |
| 0278 | (* Request to reset latched faults *)        |
| 0279 | RESET_REQ : BOOL;                            |
| 0280 |  |
| 0281 | (* Vacuum Interlocks *)                      |
| 0282 | PE101_PSL_LO: BOOL;                          |
| 0283 | PE201_PSL_LO: BOOL;                          |
| 0284 | PE202_PSL_LO: BOOL;                          |
| 0285 | PE203_Piy_OK: BOOL;                          |
| 0286 | PE203_PSH_HI: BOOL;                          |
| 0287 | PE203_PSH_MIDHI: BOOL;                       |
| 0288 | PE203_PSL_MIDLO: BOOL;                       |
| 0289 | PE203_PSL_LO: BOOL;                          |
| 0290 | PE211_Piy_OK: BOOL;                          |
| 0291 | PE211_PSH_HI: BOOL;                          |
| 0292 | PE211_PSH_MIDHI: BOOL;                       |
| 0293 | PE211_PSL_MIDLO: BOOL;                       |
| 0294 | PE211_PSL_LO: BOOL;                          |
| 0295 | PE212_Piy_OK: BOOL;                          |
| 0296 | PE212_PSH_HI: BOOL;                          |
| 0297 | PE212_PSH_MIDHI: BOOL;                       |
| 0298 | PE212_PSL_MIDLO: BOOL;                       |
| 0299 | PE212_PSL_LO: BOOL;                          |
| 0300 | RP211_PSL: BOOL;                             |
| 0301 | BP211_PSL: BOOL;                             |
| 0302 |  |
| 0303 | (* Valve Positions *)                        |
| 0304 | V100_OPN: BOOL;                              |
| 0305 | V100_CSD: BOOL;                              |
| 0306 | V101_OPN: BOOL;                              |
| 0307 | V101_CSD: BOOL;                              |
| 0308 | V201_OPN: BOOL;                              |
| 0309 | V201_CSD: BOOL;                              |
| 0310 | V202_OPN: BOOL;                              |
| 0311 | V202_CSD: BOOL;                              |
| 0312 | V203_OPN: BOOL;                              |
| 0313 | V203_CSD: BOOL;                              |
| 0314 | V204_OPN: BOOL;                              |
| 0315 | V204_CSD: BOOL;                              |
| 0316 | VPV211_OPN: BOOL;                            |
| 0317 | VPV211_CSD: BOOL;                            |
| 0318 | RPV211_OPN: BOOL;                            |
| 0319 | RPV211_CSD: BOOL;                            |
| 0320 | TPV211_OPN: BOOL;                            |
| 0321 | TPV211_CSD: BOOL;                            |
| 0322 | LLV211_OPN: BOOL;                            |
| 0323 | LLV211_CSD: BOOL;                            |
| 0324 | VPV212_OPN: BOOL;                            |
| 0325 | VPV212_CSD: BOOL;                            |
| 0326 | RPV212_OPN: BOOL;                            |
| 0327 | RPV212_CSD: BOOL;                            |
|      |  |

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| 0328 | TPV212_OPN: BOOL;                    |
| 0329 | TPV212_CSD: BOOL;                    |
| 0330 |                                      |
| 0331 | (* Pump Status *)                    |
| 0332 | TP201_OK: BOOL;                      |
| 0333 | TP201_ON: BOOL;                      |
| 0334 | TP201_READY: BOOL;                   |
| 0335 | TP211_OK: BOOL;                      |
| 0336 | TP211_READY: BOOL;                   |
| 0337 | TP212_OK: BOOL;                      |
| 0338 | TP212_READY: BOOL;                   |
| 0339 | RP211_ON: BOOL;                      |
| 0340 | BP211_ON: BOOL;                      |
| 0341 |                                      |
| 0342 | (* LoadLock Status *)                |
| 0343 | LL211_LID_CLOSED: BOOL;              |
| 0344 | LL211_ARM_RETRACTED: BOOL;           |
| 0345 |                                      |
| 0346 | (* Configuration Interlocks *)       |
| 0347 | ES_CONFIG_OK: BOOL;                  |
| 0348 | LL_CONFIG_OK: BOOL;                  |
| 0349 |                                      |
| 0350 | (* Latched Interlocks *)             |
| 0351 | LL_ACTUATOR_OK: BOOL;                |
| 0352 | LL_PE101_PSL_LO: BOOL;               |
| 0353 | LL_PE201_PSL_LO: BOOL;               |
| 0354 | LL_V202_OPN: BOOL;                   |
| 0355 | LL_PE202_PSL_LO: BOOL;               |
| 0356 | LL_PE203_PIIY_OK: BOOL;              |
| 0357 | LL_PE203_PSL_LO: BOOL;               |
| 0358 | LL_TP201_OK: BOOL;                   |
| 0359 | LL_ES_CONFIG_OK: BOOL;               |
| 0360 | LL_LL_CONFIG_OK: BOOL;               |
| 0361 | LL_PE211_PIIY_OK: BOOL;              |
| 0362 | LL_PE212_PIIY_OK: BOOL;              |
| 0363 | LL_BP211_ON: BOOL;                   |
| 0364 | LL_TP211_OK: BOOL;                   |
| 0365 | LL_TP212_OK: BOOL;                   |
| 0366 |                                      |
| 0367 | Reset_Required: BOOL;                |
| 0368 |                                      |
| 0369 | (* IAI Actuator Data and Commands *) |
| 0370 | ACTUATOR_AT_TARGET: WORD;            |
| 0371 | ACTUATOR_CMD: WORD;                  |
| 0372 | ACTUATOR_OK: BOOL;                   |
| 0373 |                                      |
| 0374 | (* Valve and Pump requests *)        |
| 0375 | V101_OPN_REQ_SC: BOOL;               |
| 0376 | V101_CLS_REQ_SC: BOOL;               |
| 0377 | V201_OPN_REQ_SC: BOOL;               |
| 0378 | V201_CLS_REQ_SC: BOOL;               |
| 0379 | V203_OPN_REQ_SC: BOOL;               |
| 0380 | V203_CLS_REQ_SC: BOOL;               |
| 0381 | V204_OPN_REQ_SC: BOOL;               |
| 0382 | V204_CLS_REQ_SC: BOOL;               |
| 0383 | V204_CLS_REQ_ES: BOOL;               |
| 0384 | VPV211_SLOW_OPN_REQ_ES: BOOL;        |
| 0385 | VPV211_SLOW_CLS_REQ_ES: BOOL;        |
| 0386 | VPV211_FAST_OPN_REQ_ES: BOOL;        |
| 0387 | VPV211_FAST_CLS_REQ_ES: BOOL;        |
| 0388 | RPV211_OPN_REQ_ES: BOOL;             |
| 0389 | RPV211_CLS_REQ_ES: BOOL;             |
| 0390 | TPV211_OPN_REQ_ES: BOOL;             |
| 0391 | TPV211_CLS_REQ_ES: BOOL;             |
| 0392 | LLV211_OPN_REQ_SC: BOOL;             |
| 0393 | LLV211_CLS_REQ_SC: BOOL;             |
| 0394 | LLV211_CLS_REQ_ES: BOOL;             |
| 0395 | LLV211_CLS_REQ_LL: BOOL;             |
| 0396 | VPV212_SLOW_OPN_REQ_LL: BOOL;        |
| 0397 | VPV212_SLOW_CLS_REQ_LL: BOOL;        |
| 0398 | VPV212_FAST_OPN_REQ_LL: BOOL;        |
| 0399 | VPV212_FAST_CLS_REQ_LL: BOOL;        |
| 0400 | RPV212_OPN_REQ_LL: BOOL;             |

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| 0401 | RPV212_CLS_REQ_LL: BOOL;                    |
| 0402 | TPV212_OPN_REQ_LL: BOOL;                    |
| 0403 | TPV212_CLS_REQ_LL: BOOL;                    |
| 0404 |   |
| 0405 | TP201_ON_REQ_SC: BOOL;                      |
| 0406 | TP201_OFF_REQ_SC: BOOL;                     |
| 0407 | TP201_VENT_ENABLE_REQ_SC: BOOL;             |
| 0408 | TP201_VENT_DISABLE_REQ_SC: BOOL;            |
| 0409 |   |
| 0410 | RP211_ON_REQ_ES: BOOL;                      |
| 0411 | RP211_ON_REQ_LL: BOOL;                      |
| 0412 | TP211_ON_REQ_ES: BOOL;                      |
| 0413 | TP211_OFF_REQ_ES: BOOL;                     |
| 0414 | TP212_ON_REQ_LL: BOOL;                      |
| 0415 | TP212_OFF_REQ_LL: BOOL;                     |
| 0416 |   |
| 0417 | (* State Machine States and Controls*)      |
| 0418 | BR_STATE: BR_ST := BR_ERROR;                |
| 0419 | BR_REQUEST: BR_REQ := BR_NONE_REQ;          |
| 0420 | ES_STATE: PV_ST := PV_ERROR;                |
| 0421 | ES_REQUEST: PV_REQ := PV_NONE_REQ;          |
| 0422 | LL_STATE: PV_ST := PV_ERROR;                |
| 0423 | LL_REQUEST: PV_REQ := PV_NONE_REQ;          |
| 0424 |   |
| 0425 | (* Valves *)                                |
| 0426 | V101: VALVE_FB;                             |
| 0427 | V201: VALVE_FB;                             |
| 0428 | V203: VALVE_FB;                             |
| 0429 | V204: VALVE_FB;                             |
| 0430 |   |
| 0431 | VPV201: VALVE_FB;                           |
| 0432 | VPV211_SLOW: VALVE_FB;                      |
| 0433 | VPV211_FAST: VALVE_FB;                      |
| 0434 | RPV211: VALVE_FB;                           |
| 0435 | TPV211: VALVE_FB;                           |
| 0436 |   |
| 0437 | LLV211: VALVE_BI_FB;                        |
| 0438 |   |
| 0439 | VPV212_SLOW: VALVE_FB;                      |
| 0440 | VPV212_FAST: VALVE_FB;                      |
| 0441 | RPV212: VALVE_FB;                           |
| 0442 | TPV212: VALVE_FB;                           |
| 0443 |   |
| 0444 | (* Pumps *)                                 |
| 0445 | TP201: TP_FB;                               |
| 0446 |   |
| 0447 | RP211: RP_FB;                               |
| 0448 | BP211_ON_CMD: BOOL := TRUE; (* always on *) |
| 0449 |   |
| 0450 | TP211: TP_FB;                               |
| 0451 | TP212: TP_FB;                               |
| 0452 | END_VAR                                     |
| 0453 |   |
| 0001 | (* Evaluate Inputs *)                       |
| 0002 | Process_Inputs();                           |
| 0003 | SC_Inputs();                                |
| 0004 | Actuator_Inputs();                          |
| 0005 |   |
| 0006 | (* Temporary interlock bypasses *)          |
| 0007 | Bypasses();                                 |
| 0008 |   |
| 0009 | (* Internal logic *)                        |
| 0010 | Fault_Logic();                              |
| 0011 |   |
| 0012 | BR_SM();                                    |
| 0013 | ES_SM();                                    |
| 0014 | LL_SM();                                    |
| 0015 |   |
| 0016 | Pumps(); (* must go before Valves() *)      |
| 0017 | Valves();                                   |
| 0018 |   |
| 0019 | (* Evaluate Outputs *)                      |
| 0020 | Actuator_Outputs();                         |

|                       |  |
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| 0021                  | SC_Outputs();  |
| 0022                  | Process_Outputs();   |
| 0023                  |  |
| 0024                  | (* Clear rising edge requests *)                               |
| 0025                  | Clear_Reqs();  |
| Actuator_Inputs (ST)  |  |
| 0001                  | (* Process Actuator Inputs *)                                  |
| 0002                  |  |
| 0003                  | ACTUATOR_OK := NOT (wActuatorStatus.10 OR wActuatorStatus.12); |
| 0004                  |  |
| 0005                  | IF (xActuatorReady) THEN                                       |
| 0006                  | FOR count2:=1 TO 4 DO  |
| 0007                  | IF (wActuatorPosition = cACTUATOR_TARGET[count2]) THEN         |
| 0008                  | ACTUATOR_AT_TARGET := count2;                                  |
| 0009                  | EXIT;  |
| 0010                  | END_IF;  |
| 0011                  | END_FOR;   |
| 0012                  | ELSE   |
| 0013                  | ACTUATOR_AT_TARGET := 0;                                       |
| 0014                  | END_IF;  |
| Actuator_Outputs (ST) |  |
| 0001                  | (* IAI Actuator Outputs *)                                     |
| 0002                  |  |
| 0003                  | IF ACTUATOR_CMD <> 0 THEN                                      |
| 0004                  | wActuatorTarget := cACTUATOR_TARGET[ACTUATOR_CMD] ;            |
| 0005                  | END_IF   |
| BR_SM (ST)            |  |
| 0001                  | (* State Machine for BRanchline selection *)                   |
| 0002                  |  |
| 0003                  | (* Always test for BR_ERROR first *)                           |
| 0004                  | IF NOT LL_ACTUATOR_OK THEN                                     |
| 0005                  | BR_STATE := BR_ERROR;  |
| 0006                  | END_IF   |
| 0007                  |  |
| 0008                  | CASE BR_STATE OF   |
| 0009                  | BR_ERROR:  |
| 0010                  | (* Leave in place *)   |
| 0011                  | ACTUATOR_CMD := 0;   |
| 0012                  |  |
| 0013                  | IF LL_ACTUATOR_OK THEN   |
| 0014                  | BR_STATE := BR_SINS1_SELECTING;                                |
| 0015                  | END_IF   |
| 0016                  |  |
| 0017                  | BR_SINS1_SELECTING:  |
| 0018                  | (* Move actuator to SINS.1 *)                                  |
| 0019                  | ACTUATOR_CMD := cSINS01;                                       |
| 0020                  |  |
| 0021                  | (* Wait for motion to complete *)                              |
| 0022                  | IF ACTUATOR_AT_TARGET = ACTUATOR_CMD THEN                      |
| 0023                  | BR_STATE := BR_SINS1_READY;                                    |
| 0024                  | ELSIF BR_REQUEST = BR_SINS1_REQ THEN                           |
| 0025                  | BR_STATE := BR_SINS1_SELECTING;                                |
| 0026                  | ELSIF BR_REQUEST = BR_SINS2_REQ THEN                           |
| 0027                  | BR_STATE := BR_SINS2_SELECTING;                                |
| 0028                  | ELSIF BR_REQUEST = BR_SINS3_REQ THEN                           |
| 0029                  | BR_STATE := BR_SINS3_SELECTING;                                |
| 0030                  | ELSIF BR_REQUEST = BR_YAG_REQ THEN                             |
| 0031                  | BR_STATE := BR_YAG_SELECTING;                                  |
| 0032                  | END_IF   |
| 0033                  |  |
| 0034                  | BR_SINS1_READY:  |
| 0035                  | (* Keep at SINS.1 *)   |
| 0036                  | ACTUATOR_CMD := cSINS01;                                       |
| 0037                  |  |
| 0038                  | (* Look for state change request *)                            |
| 0039                  | IF BR_REQUEST = BR_NONE_REQ THEN                               |
| 0040                  | BR_STATE := BR_SINS1_READY;                                    |
| 0041                  | ELSIF BR_REQUEST = BR_SINS1_REQ THEN                           |
| 0042                  | BR_STATE := BR_SINS1_READY;                                    |
| 0043                  | ELSIF BR_REQUEST = BR_SINS2_REQ THEN                           |
| 0044                  | BR_STATE := BR_SINS2_SELECTING;                                |

|      |   |
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| 0045 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0046 | BR_STATE := BR_SINS3_SELECTING;           |
| 0047 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0048 | BR_STATE := BR_YAG_SELECTING;             |
| 0049 | END_IF                                    |
| 0050 |   |
| 0051 | BR_SINS2_SELECTING:                       |
| 0052 | (* Move actuator to SINS.2 *)             |
| 0053 | ACTUATOR_CMD := cSINS02;                  |
| 0054 |   |
| 0055 | (* Wait for motion to complete *)         |
| 0056 | IF ACTUATOR_AT_TARGET = ACTUATOR_CMD THEN |
| 0057 | BR_STATE := BR_SINS2_READY;               |
| 0058 | (* Else look for state change request *)  |
| 0059 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0060 | BR_STATE := BR_SINS1_SELECTING;           |
| 0061 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0062 | BR_STATE := BR_SINS2_SELECTING;           |
| 0063 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0064 | BR_STATE := BR_SINS3_SELECTING;           |
| 0065 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0066 | BR_STATE := BR_YAG_SELECTING;             |
| 0067 | END_IF                                    |
| 0068 |   |
| 0069 | BR_SINS2_READY:                           |
| 0070 | (* Keep at SINS.2 *)                      |
| 0071 | ACTUATOR_CMD := cSINS02;                  |
| 0072 |   |
| 0073 | (* Look for state change request *)       |
| 0074 | IF BR_REQUEST = BR_NONE_REQ THEN          |
| 0075 | BR_STATE := BR_SINS2_READY;               |
| 0076 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0077 | BR_STATE := BR_SINS1_SELECTING;           |
| 0078 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0079 | BR_STATE := BR_SINS2_READY;               |
| 0080 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0081 | BR_STATE := BR_SINS3_SELECTING;           |
| 0082 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0083 | BR_STATE := BR_YAG_SELECTING;             |
| 0084 | END_IF                                    |
| 0085 |   |
| 0086 |   |
| 0087 | BR_SINS3_SELECTING:                       |
| 0088 | (* Move actuator to SINS.3 *)             |
| 0089 | ACTUATOR_CMD := cSINS03;                  |
| 0090 |   |
| 0091 | (* Wait for motion to complete *)         |
| 0092 | IF ACTUATOR_AT_TARGET = ACTUATOR_CMD THEN |
| 0093 | BR_STATE := BR_SINS3_READY;               |
| 0094 | (* Else look for state change request *)  |
| 0095 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0096 | BR_STATE := BR_SINS1_SELECTING;           |
| 0097 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0098 | BR_STATE := BR_SINS2_SELECTING;           |
| 0099 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0100 | BR_STATE := BR_SINS3_SELECTING;           |
| 0101 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0102 | BR_STATE := BR_YAG_SELECTING;             |
| 0103 | END_IF                                    |
| 0104 |   |
| 0105 | BR_SINS3_READY:                           |
| 0106 | (* Keep at SINS.3 *)                      |
| 0107 | ACTUATOR_CMD := cSINS03;                  |
| 0108 |   |
| 0109 | (* Look for state change request *)       |
| 0110 | IF BR_REQUEST = BR_NONE_REQ THEN          |
| 0111 | BR_STATE := BR_SINS3_READY;               |
| 0112 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0113 | BR_STATE := BR_SINS1_SELECTING;           |
| 0114 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0115 | BR_STATE := BR_SINS2_SELECTING;           |
| 0116 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0117 | BR_STATE := BR_SINS3_READY;               |



|      |   |
|------|---|
| 0118 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0119 | BR_STATE := BR_YAG_SELECTING;             |
| 0120 | END_IF                                    |
| 0121 |   |
| 0122 |   |
| 0123 | BR_YAG_SELECTING:                         |
| 0124 | (* Move actuator to YAG *)                |
| 0125 | ACTUATOR_CMD := cYAG;                     |
| 0126 |   |
| 0127 | (* Wait for motion to complete *)         |
| 0128 | IF ACTUATOR_AT_TARGET = ACTUATOR_CMD THEN |
| 0129 | BR_STATE := BR_YAG_READY;                 |
| 0130 | (* Else look for state change request *)  |
| 0131 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0132 | BR_STATE := BR_SINS1_SELECTING;           |
| 0133 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0134 | BR_STATE := BR_SINS2_SELECTING;           |
| 0135 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0136 | BR_STATE := BR_SINS3_SELECTING;           |
| 0137 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0138 | BR_STATE := BR_YAG_SELECTING;             |
| 0139 | END_IF                                    |
| 0140 |   |
| 0141 | BR_YAG_READY:                             |
| 0142 | (* Keep at YAG *)                         |
| 0143 | ACTUATOR_CMD := cYAG;                     |
| 0144 |   |
| 0145 | (* Look for state change request *)       |
| 0146 | IF BR_REQUEST = BR_NONE_REQ THEN          |
| 0147 | BR_STATE := BR_YAG_READY;                 |
| 0148 | ELSIF BR_REQUEST = BR_SINS1_REQ THEN      |
| 0149 | BR_STATE := BR_SINS1_SELECTING;           |
| 0150 | ELSIF BR_REQUEST = BR_SINS2_REQ THEN      |
| 0151 | BR_STATE := BR_SINS2_SELECTING;           |
| 0152 | ELSIF BR_REQUEST = BR_SINS3_REQ THEN      |
| 0153 | BR_STATE := BR_SINS3_SELECTING;           |
| 0154 | ELSIF BR_REQUEST = BR_YAG_REQ THEN        |
| 0155 | BR_STATE := BR_YAG_READY;                 |
| 0156 | END_IF                                    |
| 0157 |   |
| 0158 | ELSE                                      |
| 0159 | BR_STATE := BR_ERROR;                     |
| 0160 | END_CASE;                                 |

#### Bypasses (ST)

|      |  |
|------|--|
| 0001 | (* Temporary Bypass Logic *)                 |
| 0002 | (* Will remove this after initial testing *) |
| 0003 | ACTUATOR_OK := TRUE;                         |
| 0004 | ES_CONFIG_OK := TRUE;                        |
| 0005 | LL_CONFIG_OK := TRUE;                        |
| 0006 |  |
| 0007 | (* For testing during DP repair *)           |
| 0008 | V100_OPN := TRUE;                            |
| 0009 | V100_CSD := FALSE;                           |
| 0010 |  |
| 0011 | V101_OPN := TRUE;                            |
| 0012 | V101_CSD := FALSE;                           |
| 0013 |  |
| 0014 | V201_OPN := TRUE;                            |
| 0015 | V201_CSD := FALSE;                           |
| 0016 |  |
| 0017 | V202_OPN := FALSE;                           |
| 0018 | V202_CSD := TRUE;                            |
| 0019 |  |
| 0020 | V203_OPN := FALSE;                           |
| 0021 | V203_CSD := TRUE;                            |

#### Clear\_Reqs (ST)

|      |   |
|------|---|
| 0001 | (* Clear all edge-triggered supervisory requests *) |
| 0002 |   |
| 0003 | SC_RESET_REQ := 0;                                  |
| 0004 |   |
| 0005 | SC_V101_OPN_REQ := 0;                               |
| 0006 | SC_V101_CLS_REQ := 0;                               |

|            |  |
|------------|--|
| 0007       |  |
| 0008       | SC_V201_OPN_REQ := 0;  |
| 0009       | SC_V201_CLS_REQ := 0;  |
| 0010       |  |
| 0011       | SC_V203_OPN_REQ := 0;  |
| 0012       | SC_V203_CLS_REQ := 0;  |
| 0013       |  |
| 0014       | SC_V204_OPN_REQ := 0;  |
| 0015       | SC_V204_CLS_REQ := 0;  |
| 0016       |  |
| 0017       | SC_TP201_ON_REQ := 0;  |
| 0018       | SC_TP201_OFF_REQ := 0;   |
| 0019       | SC_TP201_VENT_ENABLE_REQ := 0;   |
| 0020       | SC_TP201_VENT_DISABLE_REQ := 0;  |
| 0021       |  |
| 0022       | SC_SLOTV211_OPN_REQ := 0;  |
| 0023       | SC_SLOTV211_CLS_REQ := 0;  |
| ES_SM (ST) |  |
| 0001       | (* ES211 Pump/Vent State Machine *)                                    |
| 0002       |  |
| 0003       | (* Always test for PV_ERROR first *)                                   |
| 0004       | IF NOT (LL_PE211_PIIY_OK AND LL_ES_CONFIG_OK) THEN                     |
| 0005       | ES_STATE := PV_ERROR;  |
| 0006       | END_IF   |
| 0007       |  |
| 0008       | CASE ES_STATE OF   |
| 0009       | PV_ERROR:  |
| 0010       | V204_CLS_REQ_ES := TRUE;   |
| 0011       | LLV211_CLS_REQ_ES := TRUE;   |
| 0012       | RPV211_OPN_REQ_ES := FALSE;  |
| 0013       | RP211_ON_REQ_ES := FALSE;  |
| 0014       | VPV211_SLOW_OPN_REQ_ES := FALSE;                                       |
| 0015       | VPV211_FAST_OPN_REQ_ES := FALSE;                                       |
| 0016       | TPV211_OPN_REQ_ES := FALSE;  |
| 0017       | TP211_ON_REQ_ES := FALSE;  |
| 0018       |  |
| 0019       | IF LL_PE211_PIIY_OK THEN   |
| 0020       | ES_STATE := PV_ISOLATING;  |
| 0021       | END_IF   |
| 0022       |  |
| 0023       | PV_ISOLATING:  |
| 0024       | V204_CLS_REQ_ES := TRUE;   |
| 0025       | LLV211_CLS_REQ_ES := TRUE;   |
| 0026       | RPV211_OPN_REQ_ES := FALSE;  |
| 0027       | RP211_ON_REQ_ES := FALSE;  |
| 0028       | VPV211_SLOW_OPN_REQ_ES := FALSE;                                       |
| 0029       | VPV211_FAST_OPN_REQ_ES := FALSE;                                       |
| 0030       | TPV211_OPN_REQ_ES := FALSE;  |
| 0031       | TP211_ON_REQ_ES := FALSE;  |
| 0032       |  |
| 0033       | IF V204_CSD AND LLV211_CSD AND RPV211_CSD THEN                         |
| 0034       | ES_STATE := PV_ISOLATED;   |
| 0035       | END_IF   |
| 0036       |  |
| 0037       | PV_ISOLATED:   |
| 0038       | V204_CLS_REQ_ES := TRUE;   |
| 0039       | LLV211_CLS_REQ_ES := TRUE;   |
| 0040       | RPV211_OPN_REQ_ES := FALSE;  |
| 0041       | RP211_ON_REQ_ES := FALSE;  |
| 0042       | VPV211_SLOW_OPN_REQ_ES := FALSE;                                       |
| 0043       | VPV211_FAST_OPN_REQ_ES := FALSE;                                       |
| 0044       | TPV211_OPN_REQ_ES := FALSE;  |
| 0045       | TP211_ON_REQ_ES := FALSE;  |
| 0046       |  |
| 0047       | IF (ES_REQUEST = PV_VENT_REQ) THEN                                     |
| 0048       | ES_STATE := PV_SLOW_VENTING;   |
| 0049       | ELSIF (ES_REQUEST = PV_PUMP_REQ) AND PE211_PSL_MIDLO AND TP211_OK THEN |
| 0050       | ES_STATE := PV_TP_PUMPING;   |
| 0051       | ELSIF (ES_REQUEST = PV_PUMP_REQ) THEN                                  |
| 0052       | ES_STATE := PV_RP_STARTING;  |
| 0053       | END_IF   |
| 0054       |  |
| 0055       | PV_SLOW_VENTING:   |

|      |   |
|------|---|
| 0056 | V204_CLS_REQ_ES := TRUE;  |
| 0057 | LLV211_CLS_REQ_ES := TRUE;  |
| 0058 | RPV211_OPN_REQ_ES := FALSE;   |
| 0059 | RP211_ON_REQ_ES := FALSE;   |
| 0060 | VPV211_SLOW_OPN_REQ_ES := TRUE;   |
| 0061 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0062 | TPV211_OPN_REQ_ES := FALSE;   |
| 0063 | TP211_ON_REQ_ES := FALSE;   |
| 0064 |   |
| 0065 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0066 | ES_STATE := PV_SLOW_VENTING;  |
| 0067 | ELSIF NOT (ES_REQUEST = PV_VENT_REQ) THEN   |
| 0068 | ES_STATE := PV_ISOLATING;   |
| 0069 | ELSIF (PE211_PSH_MIDHI) THEN  |
| 0070 | ES_STATE := PV_FAST_VENTING;  |
| 0071 | END_IF  |
| 0072 |   |
| 0073 | PV_FAST_VENTING:  |
| 0074 | V204_CLS_REQ_ES := TRUE;  |
| 0075 | LLV211_CLS_REQ_ES := TRUE;  |
| 0076 | RPV211_OPN_REQ_ES := FALSE;   |
| 0077 | RP211_ON_REQ_ES := FALSE;   |
| 0078 | VPV211_SLOW_OPN_REQ_ES := TRUE;   |
| 0079 | VPV211_FAST_OPN_REQ_ES := TRUE;   |
| 0080 | TPV211_OPN_REQ_ES := FALSE;   |
| 0081 | TP211_ON_REQ_ES := FALSE;   |
| 0082 |   |
| 0083 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0084 | ES_STATE := PV_FAST_VENTING;  |
| 0085 | ELSIF NOT (ES_REQUEST = PV_VENT_REQ) THEN   |
| 0086 | ES_STATE := PV_ISOLATING;   |
| 0087 | ELSIF (PE211_PSH_HI) THEN   |
| 0088 | ES_STATE := PV_VENTED;  |
| 0089 | END_IF  |
| 0090 |   |
| 0091 | PV_VENTED:  |
| 0092 | V204_CLS_REQ_ES := TRUE;  |
| 0093 | LLV211_CLS_REQ_ES := FALSE; (* LLV211 can be opened when both ES211 and LL211 are vented *) |
| 0094 | RPV211_OPN_REQ_ES := FALSE;   |
| 0095 | RP211_ON_REQ_ES := FALSE;   |
| 0096 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0097 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0098 | TPV211_OPN_REQ_ES := FALSE;   |
| 0099 | TP211_ON_REQ_ES := FALSE;   |
| 0100 |   |
| 0101 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0102 | ES_STATE := PV_VENTED;  |
| 0103 | ELSIF NOT (ES_REQUEST = PV_VENT_REQ) THEN   |
| 0104 | ES_STATE := PV_ISOLATING;   |
| 0105 | ELSIF (NOT PE211_PSH_HI) THEN   |
| 0106 | ES_STATE := PV_FAST_VENTING;  |
| 0107 | END_IF  |
| 0108 |   |
| 0109 | PV_RP_STARTING:   |
| 0110 | V204_CLS_REQ_ES := TRUE;  |
| 0111 | LLV211_CLS_REQ_ES := TRUE;  |
| 0112 | RPV211_OPN_REQ_ES := FALSE;   |
| 0113 | RP211_ON_REQ_ES := TRUE;  |
| 0114 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0115 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0116 | TPV211_OPN_REQ_ES := FALSE;   |
| 0117 | TP211_ON_REQ_ES := FALSE;   |
| 0118 |   |
| 0119 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0120 | ES_STATE := PV_RP_STARTING;   |
| 0121 | ELSIF NOT (ES_REQUEST = PV_PUMP_REQ) THEN   |
| 0122 | ES_STATE := PV_ISOLATING;   |
| 0123 | ELSIF (RP211_ON) THEN   |
| 0124 | (* ignore RP211_PSL *)  |
| 0125 | ES_STATE := PV_RP_PUMPING;  |
| 0126 | END_IF  |
| 0127 |   |
| 0128 | PV_RP_PUMPING:  |

|      |   |
|------|---|
| 0129 | V204_CLS_REQ_ES := TRUE;  |
| 0130 | LLV211_CLS_REQ_ES := TRUE;  |
| 0131 | RPV211_OPN_REQ_ES := TRUE;  |
| 0132 | RP211_ON_REQ_ES := TRUE;  |
| 0133 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0134 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0135 | TPV211_OPN_REQ_ES := FALSE;   |
| 0136 | TP211_ON_REQ_ES := FALSE;   |
| 0137 |   |
| 0138 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0139 | ES_STATE := PV_RP_PUMPING;  |
| 0140 | ELSIF NOT (ES_REQUEST = PV_PUMP_REQ) THEN   |
| 0141 | ES_STATE := PV_ISOLATING;   |
| 0142 | ELSIF (PE211_PSL_MIDLO) THEN  |
| 0143 | ES_STATE := PV_RP_PUMPED;   |
| 0144 | END_IF  |
| 0145 |   |
| 0146 | PV_RP_PUMPED:   |
| 0147 | V204_CLS_REQ_ES := TRUE;  |
| 0148 | LLV211_CLS_REQ_ES := TRUE;  |
| 0149 | RPV211_OPN_REQ_ES := TRUE;  |
| 0150 | RP211_ON_REQ_ES := TRUE;  |
| 0151 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0152 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0153 | TPV211_OPN_REQ_ES := FALSE;   |
| 0154 | TP211_ON_REQ_ES := FALSE;   |
| 0155 |   |
| 0156 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0157 | ES_STATE := PV_RP_PUMPED;   |
| 0158 | ELSIF NOT (ES_REQUEST = PV_PUMP_REQ) THEN   |
| 0159 | ES_STATE := PV_ISOLATING;   |
| 0160 | ELSIF (NOT PE211_PSL_MIDLO) THEN  |
| 0161 | ES_STATE := PV_RP_PUMPING;  |
| 0162 | ELSIF (TP211_OK) THEN   |
| 0163 | (* First isolate, then go to TP_STARTING *)   |
| 0164 | ES_STATE := PV_ISOLATING;   |
| 0165 | END_IF  |
| 0166 |   |
| 0167 | PV_TP_PUMPING:  |
| 0168 | V204_CLS_REQ_ES := TRUE;  |
| 0169 | LLV211_CLS_REQ_ES := TRUE;  |
| 0170 | RPV211_OPN_REQ_ES := FALSE;   |
| 0171 | RP211_ON_REQ_ES := TRUE; (* Leave on in case MIDLO false *)                                 |
| 0172 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0173 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0174 | TPV211_OPN_REQ_ES := TRUE;  |
| 0175 | TP211_ON_REQ_ES := TRUE;  |
| 0176 |   |
| 0177 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0178 | ES_STATE := PV_TP_PUMPING;  |
| 0179 | ELSIF NOT (ES_REQUEST = PV_PUMP_REQ) THEN   |
| 0180 | ES_STATE := PV_ISOLATING;   |
| 0181 | ELSIF (NOT PE211_PSL_MIDLO) THEN  |
| 0182 | ES_STATE := PV_RP_PUMPING;  |
| 0183 | ELSIF (PE211_PSL_LO) THEN   |
| 0184 | ES_STATE := PV_PUMPED;  |
| 0185 | END_IF  |
| 0186 |   |
| 0187 | PV_PUMPED:  |
| 0188 | V204_CLS_REQ_ES := FALSE;   |
| 0189 | LLV211_CLS_REQ_ES := FALSE; (* LLV211 can be opened when both ES211 and LL211 are pumped *) |
| 0190 | RPV211_OPN_REQ_ES := FALSE;   |
| 0191 | RP211_ON_REQ_ES := FALSE;   |
| 0192 | VPV211_SLOW_OPN_REQ_ES := FALSE;  |
| 0193 | VPV211_FAST_OPN_REQ_ES := FALSE;  |
| 0194 | TPV211_OPN_REQ_ES := TRUE;  |
| 0195 | TP211_ON_REQ_ES := TRUE;  |
| 0196 |   |
| 0197 | IF (ES_REQUEST = PV_NONE_REQ) THEN  |
| 0198 | ES_STATE := PV_PUMPED;  |
| 0199 | ELSIF NOT (ES_REQUEST = PV_PUMP_REQ) THEN   |
| 0200 | ES_STATE := PV_ISOLATING;   |
| 0201 | ELSIF (NOT PE211_PSL_MIDLO) THEN  |

|                  |  |
|------------------|--|
| 0202             | (* return to PV_RP_PUMPING via PV_ISOLATING *)                         |
| 0203             | ES_STATE := PV_ISOLATING;  |
| 0204             | ELSIF (PE211_PSL_LO) THEN  |
| 0205             | ES_STATE := PV_PUMPED;   |
| 0206             | END_IF   |
| 0207             |  |
| 0208             | ELSE   |
| 0209             | (* Invalid State, should never get here *)                             |
| 0210             | ES_STATE := PV_ERROR;  |
| 0211             |  |
| 0212             | END_CASE   |
| 0213             |  |
| Fault_Logic (ST) |  |
| 0001             | (* Latched interlocks *)   |
| 0002             |  |
| 0003             | LL_ACTUATOR_OK := ACTUATOR_OK AND (LL_ACTUATOR_OK OR RESET_REQ);       |
| 0004             | LL_PE101_PSL_LO := PE101_PSL_LO AND (LL_PE101_PSL_LO OR RESET_REQ);    |
| 0005             | LL_PE201_PSL_LO := PE201_PSL_LO AND (LL_PE201_PSL_LO OR RESET_REQ);    |
| 0006             | LL_V202_OPN := V202_OPN AND (LL_V202_OPN OR RESET_REQ);                |
| 0007             | LL_PE202_PSL_LO := PE202_PSL_LO AND (LL_PE202_PSL_LO OR RESET_REQ);    |
| 0008             | LL_PE203_PSL_LO := PE203_PSL_LO AND (LL_PE203_PSL_LO OR RESET_REQ);    |
| 0009             |  |
| 0010             | LL_ES_CONFIG_OK := ES_CONFIG_OK AND (LL_ES_CONFIG_OK OR RESET_REQ);    |
| 0011             | LL_LL_CONFIG_OK := LL_CONFIG_OK AND (LL_LL_CONFIG_OK OR RESET_REQ);    |
| 0012             |  |
| 0013             | LL_PE203_PIIY_OK := PE203_PIIY_OK AND (LL_PE203_PIIY_OK OR RESET_REQ); |
| 0014             | LL_PE211_PIIY_OK := PE211_PIIY_OK AND (LL_PE211_PIIY_OK OR RESET_REQ); |
| 0015             | LL_PE212_PIIY_OK := PE212_PIIY_OK AND (LL_PE212_PIIY_OK OR RESET_REQ); |
| 0016             |  |
| 0017             | LL_BP211_ON := BP211_ON AND (LL_BP211_ON OR RESET_REQ);                |
| 0018             |  |
| 0019             | LL_TP201_OK := TP201_OK AND (LL_TP201_OK OR RESET_REQ);                |
| 0020             | LL_TP211_OK := TP211_OK AND (LL_TP211_OK OR RESET_REQ);                |
| 0021             | LL_TP212_OK := TP212_OK AND (LL_TP212_OK OR RESET_REQ);                |
| 0022             |  |
| 0023             | Reset_Required := (ACTUATOR_OK AND NOT LL_ACTUATOR_OK) OR              |
| 0024             | (PE101_PSL_LO AND NOT LL_PE101_PSL_LO) OR                              |
| 0025             | (PE201_PSL_LO AND NOT LL_PE201_PSL_LO) OR                              |
| 0026             | (V202_OPN AND NOT LL_V202_OPN) OR                                      |
| 0027             | (PE202_PSL_LO AND NOT LL_PE202_PSL_LO) OR                              |
| 0028             | (PE203_PSL_LO AND NOT LL_PE203_PSL_LO) OR                              |
| 0029             | (ES_CONFIG_OK AND NOT LL_ES_CONFIG_OK) OR                              |
| 0030             | (LL_CONFIG_OK AND NOT LL_LL_CONFIG_OK) OR                              |
| 0031             | (PE203_PIIY_OK AND NOT LL_PE203_PIIY_OK) OR                            |
| 0032             | (PE211_PIIY_OK AND NOT LL_PE211_PIIY_OK) OR                            |
| 0033             | (PE212_PIIY_OK AND NOT LL_PE212_PIIY_OK) OR                            |
| 0034             | (BP211_ON AND NOT LL_BP211_ON) OR                                      |
| 0035             | (TP201_OK AND NOT LL_TP201_OK) OR                                      |
| 0036             | (TP211_OK AND NOT LL_TP211_OK) OR                                      |
| 0037             | (TP212_OK AND NOT LL_TP212_OK);  |
| 0038             |  |
| LL_SM (ST)       |  |
| 0001             | (* LL211 Pump/Vent State Machine *)                                    |
| 0002             |  |
| 0003             | (* Always test for PV_ERROR first *)                                   |
| 0004             | IF NOT (LL_PE212_PIIY_OK AND LL_LL_CONFIG_OK) THEN                     |
| 0005             | LL_STATE := PV_ERROR;  |
| 0006             | END_IF   |
| 0007             |  |
| 0008             | CASE LL_STATE OF   |
| 0009             |  |
| 0010             | PV_ERROR:  |
| 0011             | LLV211_CLS_REQ_LL := TRUE;   |
| 0012             | RPV212_OPN_REQ_LL := FALSE;  |
| 0013             | RP211_ON_REQ_LL := FALSE;  |
| 0014             | VPV212_SLOW_OPN_REQ_LL := FALSE;                                       |
| 0015             | VPV212_FAST_OPN_REQ_LL := FALSE;                                       |
| 0016             | TPV212_OPN_REQ_LL := FALSE;  |
| 0017             | TP212_ON_REQ_LL := FALSE;  |
| 0018             |  |
| 0019             | IF LL_PE212_PIIY_OK THEN   |
| 0020             | LL_STATE := PV_ISOLATING;  |

|      |   |
|------|---|
| 0021 | END_IF  |
| 0022 |   |
| 0023 | PV_ISOLATING:   |
| 0024 | LLV211_CLS_REQ_LL := TRUE;  |
| 0025 | RPV212_OPN_REQ_LL := FALSE;   |
| 0026 | RP211_ON_REQ_LL := FALSE;   |
| 0027 | VPV212_SLOW_OPN_REQ_LL := FALSE;  |
| 0028 | VPV212_FAST_OPN_REQ_LL := FALSE;  |
| 0029 | TPV212_OPN_REQ_LL := FALSE;   |
| 0030 | TP212_ON_REQ_LL := FALSE;   |
| 0031 |   |
| 0032 | IF LLV211_CSD AND RPV212_CSD THEN   |
| 0033 | LL_STATE := PV_ISOLATED;  |
| 0034 | END_IF  |
| 0035 |   |
| 0036 | PV_ISOLATED:  |
| 0037 | LLV211_CLS_REQ_LL := TRUE;  |
| 0038 | RPV212_OPN_REQ_LL := FALSE;   |
| 0039 | RP211_ON_REQ_LL := FALSE;   |
| 0040 | VPV212_SLOW_OPN_REQ_LL := FALSE;  |
| 0041 | VPV212_FAST_OPN_REQ_LL := FALSE;  |
| 0042 | TPV212_OPN_REQ_LL := FALSE;   |
| 0043 | TP212_ON_REQ_LL := FALSE;   |
| 0044 |   |
| 0045 | IF (LL_REQUEST = PV_VENT_REQ) THEN  |
| 0046 | LL_STATE := PV_SLOW_VENTING;  |
| 0047 | ELSIF (LL_REQUEST = PV_PUMP_REQ) AND PE212_PSL_MIDLO AND TP212_OK THEN                      |
| 0048 | LL_STATE := PV_TP_PUMPING;  |
| 0049 | ELSIF (LL_REQUEST = PV_PUMP_REQ) THEN   |
| 0050 | LL_STATE := PV_RP_STARTING;   |
| 0051 | END_IF  |
| 0052 |   |
| 0053 | PV_SLOW_VENTING:  |
| 0054 | LLV211_CLS_REQ_LL := TRUE;  |
| 0055 | RPV212_OPN_REQ_LL := FALSE;   |
| 0056 | RP211_ON_REQ_LL := FALSE;   |
| 0057 | VPV212_SLOW_OPN_REQ_LL := TRUE;   |
| 0058 | VPV212_FAST_OPN_REQ_LL := FALSE;  |
| 0059 | TPV212_OPN_REQ_LL := FALSE;   |
| 0060 | TP212_ON_REQ_LL := FALSE;   |
| 0061 |   |
| 0062 | IF (LL_REQUEST = PV_NONE_REQ) THEN  |
| 0063 | LL_STATE := PV_SLOW_VENTING;  |
| 0064 | ELSIF NOT (LL_REQUEST = PV_VENT_REQ) THEN   |
| 0065 | LL_STATE := PV_ISOLATING;   |
| 0066 | ELSIF (PE212_PSH_MIDHI) THEN  |
| 0067 | LL_STATE := PV_FAST_VENTING;  |
| 0068 | END_IF  |
| 0069 |   |
| 0070 | PV_FAST_VENTING:  |
| 0071 | LLV211_CLS_REQ_LL := TRUE;  |
| 0072 | RPV212_OPN_REQ_LL := FALSE;   |
| 0073 | RP211_ON_REQ_LL := FALSE;   |
| 0074 | VPV212_SLOW_OPN_REQ_LL := TRUE;   |
| 0075 | VPV212_FAST_OPN_REQ_LL := TRUE;   |
| 0076 | TPV212_OPN_REQ_LL := FALSE;   |
| 0077 | TP212_ON_REQ_LL := FALSE;   |
| 0078 |   |
| 0079 | IF (LL_REQUEST = PV_NONE_REQ) THEN  |
| 0080 | LL_STATE := PV_FAST_VENTING;  |
| 0081 | ELSIF NOT (LL_REQUEST = PV_VENT_REQ) THEN   |
| 0082 | LL_STATE := PV_ISOLATING;   |
| 0083 | ELSIF (PE212_PSH_HI) THEN   |
| 0084 | LL_STATE := PV_VENTED;  |
| 0085 | END_IF  |
| 0086 |   |
| 0087 | PV_VENTED:  |
| 0088 | LLV211_CLS_REQ_LL := FALSE; (* LLV211 can be opened when both ES211 and LL211 are vented *) |
| 0089 | RPV212_OPN_REQ_LL := FALSE;   |
| 0090 | RP211_ON_REQ_LL := FALSE;   |
| 0091 | VPV212_SLOW_OPN_REQ_LL := FALSE;  |
| 0092 | VPV212_FAST_OPN_REQ_LL := FALSE;  |
| 0093 | TPV212_OPN_REQ_LL := FALSE;   |

|      |   |
|------|---|
| 0094 | TP212_ON_REQ_LL := FALSE;                                   |
| 0095 |   |
| 0096 | IF (LL_REQUEST = PV_NONE_REQ) THEN                          |
| 0097 | LL_STATE := PV_VENTED;                                      |
| 0098 | ELSIF NOT (LL_REQUEST = PV_VENT_REQ) THEN                   |
| 0099 | LL_STATE := PV_ISOLATING;                                   |
| 0100 | ELSIF (NOT PE212_PSH_HI) THEN                               |
| 0101 | LL_STATE := PV_FAST_VENTING;                                |
| 0102 | END_IF  |
| 0103 |   |
| 0104 | PV_RP_STARTING:   |
| 0105 | LLV211_CLS_REQ_ES := TRUE;                                  |
| 0106 | RPV212_OPN_REQ_LL := FALSE;                                 |
| 0107 | RP211_ON_REQ_LL := TRUE;                                    |
| 0108 | VPV212_SLOW_OPN_REQ_LL := FALSE;                            |
| 0109 | VPV212_FAST_OPN_REQ_LL := FALSE;                            |
| 0110 | TPV212_OPN_REQ_LL := FALSE;                                 |
| 0111 | TP212_ON_REQ_LL := FALSE;                                   |
| 0112 |   |
| 0113 | IF (LL_REQUEST = PV_NONE_REQ) THEN                          |
| 0114 | LL_STATE := PV_RP_STARTING;                                 |
| 0115 | ELSIF NOT (LL_REQUEST = PV_PUMP_REQ) THEN                   |
| 0116 | LL_STATE := PV_ISOLATING;                                   |
| 0117 | ELSIF (RP211_ON) THEN                                       |
| 0118 | (* ignore RP211_PSL *)                                      |
| 0119 | LL_STATE := PV_RP_PUMPING;                                  |
| 0120 | END_IF  |
| 0121 |   |
| 0122 | PV_RP_PUMPING:  |
| 0123 | LLV211_CLS_REQ_LL := TRUE;                                  |
| 0124 | RPV212_OPN_REQ_LL := TRUE;                                  |
| 0125 | RP211_ON_REQ_LL := TRUE;                                    |
| 0126 | VPV212_SLOW_OPN_REQ_LL := FALSE;                            |
| 0127 | VPV212_FAST_OPN_REQ_LL := FALSE;                            |
| 0128 | TPV212_OPN_REQ_LL := FALSE;                                 |
| 0129 | TP212_ON_REQ_LL := FALSE;                                   |
| 0130 |   |
| 0131 | IF (LL_REQUEST = PV_NONE_REQ) THEN                          |
| 0132 | LL_STATE := PV_RP_PUMPING;                                  |
| 0133 | ELSIF NOT (LL_REQUEST = PV_PUMP_REQ) THEN                   |
| 0134 | LL_STATE := PV_ISOLATING;                                   |
| 0135 | ELSIF (PE212_PSL_MIDLO) THEN                                |
| 0136 | LL_STATE := PV_RP_PUMPED;                                   |
| 0137 | END_IF  |
| 0138 |   |
| 0139 | PV_RP_PUMPED:   |
| 0140 | LLV211_CLS_REQ_LL := TRUE;                                  |
| 0141 | RPV212_OPN_REQ_LL := TRUE;                                  |
| 0142 | RP211_ON_REQ_LL := TRUE;                                    |
| 0143 | VPV212_SLOW_OPN_REQ_LL := FALSE;                            |
| 0144 | VPV212_FAST_OPN_REQ_LL := FALSE;                            |
| 0145 | TPV212_OPN_REQ_LL := FALSE;                                 |
| 0146 | TP212_ON_REQ_LL := FALSE;                                   |
| 0147 |   |
| 0148 | IF (LL_REQUEST = PV_NONE_REQ) THEN                          |
| 0149 | LL_STATE := PV_RP_PUMPED;                                   |
| 0150 | ELSIF NOT (LL_REQUEST = PV_PUMP_REQ) THEN                   |
| 0151 | LL_STATE := PV_ISOLATING;                                   |
| 0152 | ELSIF (NOT PE212_PSL_MIDLO) THEN                            |
| 0153 | LL_STATE := PV_RP_PUMPING;                                  |
| 0154 | ELSIF (TP212_OK) THEN                                       |
| 0155 | (* First isolate, then go to TP_STARTING *)                 |
| 0156 | LL_STATE := PV_ISOLATING;                                   |
| 0157 | END_IF  |
| 0158 |   |
| 0159 | PV_TP_PUMPING:  |
| 0160 | LLV211_CLS_REQ_LL := TRUE;                                  |
| 0161 | RPV212_OPN_REQ_LL := FALSE;                                 |
| 0162 | RP211_ON_REQ_LL := TRUE; (* Leave on in case MIDLO false *) |
| 0163 | VPV212_SLOW_OPN_REQ_LL := FALSE;                            |
| 0164 | VPV212_FAST_OPN_REQ_LL := FALSE;                            |
| 0165 | TPV212_OPN_REQ_LL := TRUE;                                  |
| 0166 | TP212_ON_REQ_LL := TRUE;                                    |

|                     |   |
|---------------------|---|
| 0167                |   |
| 0168                | IF (LL_REQUEST = PV_NONE_REQ) THEN  |
| 0169                | LL_STATE := PV_TP_PUMPING;  |
| 0170                | ELSIF NOT (LL_REQUEST = PV_PUMP_REQ) THEN   |
| 0171                | LL_STATE := PV_ISOLATING;   |
| 0172                | ELSIF (NOT PE212_PSL_MIDLO) THEN  |
| 0173                | LL_STATE := PV_RP_PUMPING;  |
| 0174                | ELSIF (PE212_PSL_LO) THEN   |
| 0175                | LL_STATE := PV_PUMPED;  |
| 0176                | END_IF  |
| 0177                |   |
| 0178                | PV_PUMPED:  |
| 0179                | LLV211_CLS_REQ_LL := FALSE; (* LLV211 can be opened when both ES211 and LL211 are pumped *) |
| 0180                | RPV212_OPN_REQ_LL := FALSE;   |
| 0181                | RP211_ON_REQ_LL := FALSE;   |
| 0182                | VPV212_SLOW_OPN_REQ_LL := FALSE;  |
| 0183                | VPV212_FAST_OPN_REQ_LL := FALSE;  |
| 0184                | TPV212_OPN_REQ_LL := TRUE;  |
| 0185                | TP212_ON_REQ_LL := TRUE;  |
| 0186                |   |
| 0187                | IF (LL_REQUEST = PV_NONE_REQ) THEN  |
| 0188                | LL_STATE := PV_PUMPED;  |
| 0189                | ELSIF NOT (LL_REQUEST = PV_PUMP_REQ) THEN   |
| 0190                | LL_STATE := PV_ISOLATING;   |
| 0191                | ELSIF (NOT PE212_PSL_MIDLO) THEN  |
| 0192                | (* return to PV_RP_PUMPING via PV_ISOLATING *)  |
| 0193                | LL_STATE := PV_ISOLATING;   |
| 0194                | ELSIF (PE212_PSL_LO) THEN   |
| 0195                | LL_STATE := PV_PUMPED;  |
| 0196                | END_IF  |
| 0197                |   |
| 0198                | ELSE  |
| 0199                | (* Invalid State, should never get here *)  |
| 0200                | LL_STATE := PV_ERROR;   |
| 0201                |   |
| 0202                | END_CASE  |
| Process_Inputs (ST) |   |
| 0001                | (*== Processed Inputs *)  |
| 0002                | (* DISCRETE IN *)   |
| 0003                | PE101_PSL_LO := DI_PE101_PSL_LO;  |
| 0004                | PE201_PSL_LO := DI_PE201_PSL_LO;  |
| 0005                | PE202_PSL_LO := DI_PE202_PSL_LO;  |
| 0006                |   |
| 0007                | RP211_ON := DI_RP2110_ON;   |
| 0008                | BP211_ON := DI_RP2111_ON;   |
| 0009                | RP211_PSL := DI_PE2110_PSL;   |
| 0010                | BP211_PSL := DI_PE2111_PSL;   |
| 0011                |   |
| 0012                | PE203_PIIY_OK := DI_PE203_PIIY_OK;  |
| 0013                | PE203_PSH_HI := DI_PE203_PIIY_OK AND NOT DI_PE203_PSL_HI;                                   |
| 0014                | PE203_PSH_MIDHI := DI_PE203_PIIY_OK AND NOT DI_PE203_PSL_MIDHI;                             |
| 0015                | PE203_PSL_MIDLO := DI_PE203_PSL_MIDLO;  |
| 0016                | PE203_PSL_LO := DI_PE203_PSL_LO;  |
| 0017                |   |
| 0018                | PE211_PIIY_OK := DI_PE211_PIIY_OK;  |
| 0019                | PE211_PSH_HI := DI_PE211_PIIY_OK AND NOT DI_PE211_PSL_HI;                                   |
| 0020                | PE211_PSH_MIDHI := DI_PE211_PIIY_OK AND NOT DI_PE211_PSL_MIDHI;                             |
| 0021                | PE211_PSL_MIDLO := DI_PE211_PSL_MIDLO;  |
| 0022                | PE211_PSL_LO := DI_PE211_PSL_LO;  |
| 0023                |   |
| 0024                | PE212_PIIY_OK := DI_PE212_PIIY_OK;  |
| 0025                | PE212_PSH_HI := DI_PE212_PIIY_OK AND NOT DI_PE212_PSL_HI;                                   |
| 0026                | PE212_PSH_MIDHI := DI_PE212_PIIY_OK AND NOT DI_PE212_PSL_MIDHI;                             |
| 0027                | PE212_PSL_MIDLO := DI_PE212_PSL_MIDLO;  |
| 0028                | PE212_PSL_LO := DI_PE212_PSL_LO;  |
| 0029                |   |
| 0030                | V100_OPN := DI_V100_OPEN;   |
| 0031                | V100_CSD := DI_V100_CLOSED;   |
| 0032                |   |
| 0033                | V101_OPN := DI_V101_OPEN AND DO_V101_OPEN_CMD;  |
| 0034                | V101_CSD := DI_V101_CLOSED AND NOT DO_V101_OPEN_CMD;  |
| 0035                |   |
| 0036                | V201_OPN := DI_V201_OPEN AND DO_V201_OPEN_CMD;  |



|      |  |
|------|--|
| 0037 | V201_CSD := DI_V201_CLOSED AND NOT DO_V201_OPEN_CMD;       |
| 0038 |  |
| 0039 | V202_OPN := DI_V202_OPEN;                                  |
| 0040 | V202_CSD := DI_V202_CLOSED;                                |
| 0041 |  |
| 0042 | V203_OPN := DI_V203_OPEN AND DO_V203_OPEN_CMD;             |
| 0043 | V203_CSD := DI_V203_CLOSED AND NOT DO_V203_OPEN_CMD;       |
| 0044 |  |
| 0045 | V204_OPN := DI_V204_OPEN AND DO_V204_OPEN_CMD;             |
| 0046 | V204_CSD := DI_V204_CLOSED AND NOT DO_V204_OPEN_CMD;       |
| 0047 |  |
| 0048 | TP201_OK := DI_TP201_TURBO_OK;                             |
| 0049 | TP201_ON := TP201_OK AND DO_TP201_ON_CMD;                  |
| 0050 | TP201_READY := TP201_ON AND DI_TP201_AT_SPEED;             |
| 0051 |  |
| 0052 | VPV211_OPN := DO_VENT211_SLOW_CMD OR DO_VENT211_FAST_CMD;  |
| 0053 | VPV211_CSD := NOT VPV211_OPN;                              |
| 0054 |  |
| 0055 | RPV211_OPN := DI_RPV211_OPEN AND DO_RPV211_OPEN_CMD;       |
| 0056 | RPV211_CSD := DI_RPV211_CLOSED AND NOT DO_RPV211_OPEN_CMD; |
| 0057 |  |
| 0058 | TPV211_OPN := DI_TPV211_OPEN AND DO_TPV211_OPEN_CMD;       |
| 0059 | TPV211_CSD := DI_TPV211_CLOSED AND NOT DO_TPV211_OPEN_CMD; |
| 0060 |  |
| 0061 | TP211_OK := DI_TP211_TURBO_OK;                             |
| 0062 | TP211_READY := DI_TP211_AT_SPEED AND DO_TP211_ON_CMD;      |
| 0063 |  |
| 0064 | VPV212_OPN := DO_VENT212_SLOW_CMD OR DO_VENT212_FAST_CMD;  |
| 0065 | VPV212_CSD := NOT VPV212_OPN;                              |
| 0066 |  |
| 0067 | RPV212_OPN := DI_RPV212_OPEN AND DO_RPV212_OPEN_CMD;       |
| 0068 | RPV212_CSD := DI_RPV212_CLOSED AND NOT DO_RPV212_OPEN_CMD; |
| 0069 |  |
| 0070 | TPV212_OPN := DI_TPV212_OPEN AND DO_TPV212_OPEN_CMD;       |
| 0071 | TPV212_CSD := DI_TPV212_CLOSED AND NOT DO_TPV212_OPEN_CMD; |
| 0072 |  |
| 0073 | TP212_OK := DI_TP212_TURBO_OK;                             |
| 0074 | TP212_READY := DI_TP212_AT_SPEED AND DO_TP212_ON_CMD;      |
| 0075 |  |
| 0076 | LLV211_OPN := DI_SLOTV211_OPEN;                            |
| 0077 | LLV211_CSD := DI_SLOTV211_CLOSED;                          |
| 0078 |  |
| 0079 | LL211_LID_CLOSED := DI_LL211_LID_CLOSED;                   |
| 0080 | LL211_ARM_RETRACTED := DI_LL211_ARM_RETRACTED;             |

Process\_Outputs (ST)

|      |  |
|------|--|
| 0001 | (* Process Outputs *)                        |
| 0002 |  |
| 0003 | DO_RP2110_ON_CMD := RP211.on_cmd;            |
| 0004 | DO_RP2111_ON_CMD := BP211.ON_CMD;            |
| 0005 | DO_V101_OPEN_CMD := V101.open_cmd;           |
| 0006 | DO_V201_OPEN_CMD := V201.open_cmd;           |
| 0007 | DO_V203_OPEN_CMD := V203.open_cmd;           |
| 0008 | DO_V204_OPEN_CMD := V204.open_cmd;           |
| 0009 | DO_TP201_ON_CMD := TP201.on_cmd;             |
| 0010 | DO_TP201_VENT_ENABLE_CMD := VPV201.open_cmd; |
| 0011 |  |
| 0012 | DO_TP211_ON_CMD := TP211.on_cmd;             |
| 0013 | DO_TPV211_OPEN_CMD := TPV211.open_cmd;       |
| 0014 | DO_RPV211_OPEN_CMD := RPV211.open_cmd;       |
| 0015 | DO_VENT211_SLOW_CMD := VPV211_SLOW.open_cmd; |
| 0016 | DO_VENT211_FAST_CMD := VPV211_FAST.open_cmd; |
| 0017 |  |
| 0018 | DO_SLOTV211_OPEN_CMD := LLV211.open_cmd;     |
| 0019 | DO_SLOTV211_CLOSE_CMD := LLV211.close_cmd;   |
| 0020 |  |
| 0021 | DO_TP212_ON_CMD := TP212.on_cmd;             |
| 0022 | DO_TPV212_OPEN_CMD := TPV212.open_cmd;       |
| 0023 | DO_RPV212_OPEN_CMD := RPV212.open_cmd;       |
| 0024 | DO_VENT212_SLOW_CMD := VPV212_SLOW.open_cmd; |
| 0025 | DO_VENT212_FAST_CMD := VPV212_FAST.open_cmd; |

Pumps (ST)

|      |                          |
|------|--------------------------|
| 0001 | (* Pump Control Logic *) |
|------|--------------------------|

|                |   |
|----------------|---|
| 0002           |   |
| 0003           | (* BP211 *)   |
| 0004           | BP211_ON_CMD := TRUE; (* always on *)                   |
| 0005           |   |
| 0006           | (* RP211 *)   |
| 0007           | RP211.on_ena := TRUE;                                   |
| 0008           | RP211.off_ena := RPV211_CSD AND RPV212_CSD;             |
| 0009           | RP211.on_req := RP211_ON_REQ_ES OR RP211_ON_REQ_LL;     |
| 0010           | RP211.off_req := NOT RP211.on_req;                      |
| 0011           | RP211();  |
| 0012           |   |
| 0013           | (* TP201 *)   |
| 0014           | TP201.on_intlk := LL_PE203_PIIY_OK;                     |
| 0015           | TP201.on_ena := TRUE;                                   |
| 0016           | TP201.off_ena := V203_CSD AND V204_CSD;                 |
| 0017           | TP201.on_req := TP201_ON_REQ_SC;                        |
| 0018           | TP201.off_req := TP201_OFF_REQ_SC;                      |
| 0019           | TP201();  |
| 0020           |   |
| 0021           | (* TP211 *)   |
| 0022           | TP211.on_intlk := LL_BP211_ON;                          |
| 0023           | TP211.on_ena := TPV211_CSD;                             |
| 0024           | TP211.off_ena := TPV211_CSD;                            |
| 0025           | TP211.on_req := TP211_ON_REQ_ES;                        |
| 0026           | TP211.off_req := NOT TP211.on_req;                      |
| 0027           | TP211();  |
| 0028           |   |
| 0029           | (* TP212 *)   |
| 0030           | TP212.on_intlk := LL_BP211_ON;                          |
| 0031           | TP212.on_ena := TPV212_CSD;                             |
| 0032           | TP212.off_ena := TPV212_CSD;                            |
| 0033           | TP212.on_req := TP212_ON_REQ_LL;                        |
| 0034           | TP212.off_req := NOT TP212.on_req;                      |
| 0035           | TP212();  |
| SC_Inputs (ST) |   |
| 0001           | (* Supervisory Control Inputs *)                        |
| 0002           | RESET_REQ := SC_RESET_REQ;                              |
| 0003           |   |
| 0004           | (* Level-Triggered signals *)                           |
| 0005           |   |
| 0006           | (* Edge-Triggered signals *)                            |
| 0007           | V101_OPN_REQ_SC := SC_V101_OPN_REQ;                     |
| 0008           | V101_CLS_REQ_SC := SC_V101_CLS_REQ;                     |
| 0009           | V201_OPN_REQ_SC := SC_V201_OPN_REQ;                     |
| 0010           | V201_CLS_REQ_SC := SC_V201_CLS_REQ;                     |
| 0011           | V203_OPN_REQ_SC := SC_V203_OPN_REQ;                     |
| 0012           | V203_CLS_REQ_SC := SC_V203_CLS_REQ;                     |
| 0013           | V204_OPN_REQ_SC := SC_V204_OPN_REQ;                     |
| 0014           | V204_CLS_REQ_SC := SC_V204_CLS_REQ;                     |
| 0015           | TP201_ON_REQ_SC := SC_TP201_ON_REQ;                     |
| 0016           | TP201_OFF_REQ_SC := SC_TP201_OFF_REQ;                   |
| 0017           | TP201_VENT_ENABLE_REQ_SC := SC_TP201_VENT_ENABLE_REQ;   |
| 0018           | TP201_VENT_DISABLE_REQ_SC := SC_TP201_VENT_DISABLE_REQ; |
| 0019           | LLV211_OPN_REQ_SC := SC_SLOTV211_OPN_REQ;               |
| 0020           | LLV211_CLS_REQ_SC := SC_SLOTV211_CLS_REQ;               |
| 0021           |   |
| 0022           | (* BR_REQ *)  |
| 0023           | CASE SC_BR_CMD_REQ OF                                   |
| 0024           | 0:  |
| 0025           | BR_REQUEST := BR_NONE_REQ;                              |
| 0026           | 1:  |
| 0027           | BR_REQUEST := BR_SINS1_REQ;                             |
| 0028           | 2:  |
| 0029           | BR_REQUEST := BR_SINS2_REQ;                             |
| 0030           | 3:  |
| 0031           | BR_REQUEST := BR_SINS3_REQ;                             |
| 0032           | 4:  |
| 0033           | BR_REQUEST := BR_YAG_REQ;                               |
| 0034           | ELSE  |
| 0035           | BR_REQUEST := BR_NONE_REQ;                              |
| 0036           | END_CASE;   |
| 0037           |   |
| 0038           | (* ES_REQ *)  |

|                 |   |
|-----------------|---|
| 0039            | CASE SC_ES_CMD_REQ OF   |
| 0040            | 0:  |
| 0041            | ES_REQUEST := PV_NONE_REQ;  |
| 0042            | 1:  |
| 0043            | ES_REQUEST := PV_ISOLATE_REQ;   |
| 0044            | 2:  |
| 0045            | ES_REQUEST := PV_PUMP_REQ;  |
| 0046            | 3:  |
| 0047            | ES_REQUEST := PV_VENT_REQ;  |
| 0048            | ELSE  |
| 0049            | ES_REQUEST := PV_NONE_REQ;  |
| 0050            | END_CASE;   |
| 0051            |   |
| 0052            |   |
| 0053            | (* LL_REQ *)  |
| 0054            | CASE SC_LL_CMD_REQ OF   |
| 0055            | 0:  |
| 0056            | LL_REQUEST := PV_NONE_REQ;  |
| 0057            | 1:  |
| 0058            | LL_REQUEST := PV_ISOLATE_REQ;   |
| 0059            | 2:  |
| 0060            | LL_REQUEST := PV_PUMP_REQ;  |
| 0061            | 3:  |
| 0062            | LL_REQUEST := PV_VENT_REQ;  |
| 0063            | ELSE  |
| 0064            | LL_REQUEST := PV_NONE_REQ;  |
| 0065            | END_CASE;   |
| 0066            |   |
| 0067            |   |
| 0068            |   |
| 0069            |   |
| SC_Outputs (ST) |   |
| 0001            | (* Supervisory Control Outputs *)   |
| 0002            | SC_RESET_REQUIRED := Reset_Required;  |
| 0003            | SC_ATB := TRUE;   |
| 0004            | SC_AFB := FALSE;  |
| 0005            |   |
| 0006            | (* Inputs *)  |
| 0007            | SC_PE101_PSL := PE101_PSL_LO;   |
| 0008            | SC_PE201_PSL := PE201_PSL_LO;   |
| 0009            | SC_PE202_PSL := PE202_PSL_LO;   |
| 0010            |   |
| 0011            | SC_RP2110_AT_SPEED := DI_RP2110_ON;   |
| 0012            | SC_RP2111_AT_SPEED := DI_RP2111_ON;   |
| 0013            | SC_PE2110_PSL := DI_PE2110_PSL;   |
| 0014            | SC_PE2111_PSL := DI_PE2111_PSL;   |
| 0015            |   |
| 0016            | SC_PE203_OK := DI_PE203_Piy_OK;   |
| 0017            | SC_PE203_PSL_HI := DI_PE203_PSL_HI;   |
| 0018            | SC_PE203_PSL_MIDHI := DI_PE203_PSL_MIDHI;   |
| 0019            | SC_PE203_PSL_MIDLO := DI_PE203_PSL_MIDLO;   |
| 0020            | SC_PE203_PSL_LO := DI_PE203_PSL_LO;   |
| 0021            |   |
| 0022            | SC_PE211_OK := DI_PE211_Piy_OK;   |
| 0023            | SC_PE211_PSL_HI := DI_PE211_PSL_HI;   |
| 0024            | SC_PE211_PSL_MIDHI := DI_PE211_PSL_MIDHI;   |
| 0025            | SC_PE211_PSL_MIDLO := DI_PE211_PSL_MIDLO;   |
| 0026            | SC_PE211_PSL_LO := DI_PE211_PSL_LO;   |
| 0027            |   |
| 0028            | SC_PE212_OK := DI_PE212_Piy_OK;   |
| 0029            | SC_PE212_PSL_HI := DI_PE212_PSL_HI;   |
| 0030            | SC_PE212_PSL_MIDHI := DI_PE212_PSL_MIDHI;   |
| 0031            | SC_PE212_PSL_MIDLO := DI_PE212_PSL_MIDLO;   |
| 0032            | SC_PE212_PSL_LO := DI_PE212_PSL_LO;   |
| 0033            |   |
| 0034            | SC_LL211_LID_CLOSED := DI_LL211_LID_CLOSED;   |
| 0035            | SC_LL211_ARM_RETRACTED := DI_LL211_ARM_RETRACTED;                                       |
| 0036            |   |
| 0037            | SC_V100_OPEN := V100_OPN;   |
| 0038            | SC_V100_CLOSED := V100_CSD;   |
| 0039            |   |
| 0040            | SC_V101_BEAM_PASS := (NOT V100_CSD) AND (NOT V101_CSD) AND (BR_STATE = BR_SINS1_READY); |
| 0041            | SC_V101_OPEN := V101_OPN;   |

|      |   |
|------|---|
| 0042 | SC_V101_CLOSED := V101_CSD;   |
| 0043 | SC_V101_OPEN_PERMIT := V101.open_ena;   |
| 0044 | SC_V101_CLOSE_PERMIT := V101.close_ena;   |
| 0045 | SC_V101_OPEN_CMD := V101.open_cmd;  |
| 0046 | SC_V101_NOT_SYMBOL := V101.not_symbol;  |
| 0047 |   |
| 0048 | SC_V201_BEAM_PASS := (NOT V100_CSD) AND (NOT V201_CSD) AND (BR_STATE = BR_SINS2_READY); |
| 0049 | SC_V201_OPEN := V201_OPN;   |
| 0050 | SC_V201_CLOSED := V201_CSD;   |
| 0051 | SC_V201_OPEN_PERMIT := V201.open_ena;   |
| 0052 | SC_V201_CLOSE_PERMIT := V201.close_ena;   |
| 0053 | SC_V201_OPEN_CMD := V201.open_cmd;  |
| 0054 | SC_V201_NOT_SYMBOL := V201.not_symbol;  |
| 0055 |   |
| 0056 | SC_V202_OPEN := V202_OPN;   |
| 0057 | SC_V202_CLOSED := V202_CSD;   |
| 0058 | SC_V202_BEAM_PASS := SC_V201_BEAM_PASS AND (NOT V202_CSD);                              |
| 0059 |   |
| 0060 | SC_V203_BEAM_PASS := SC_V202_BEAM_PASS AND (NOT V203_CSD);                              |
| 0061 | SC_V203_OPEN := V203_OPN;   |
| 0062 | SC_V203_CLOSED := V203_CSD;   |
| 0063 | SC_V203_OPEN_PERMIT := V203.open_ena;   |
| 0064 | SC_V203_CLOSE_PERMIT := V203.close_ena;   |
| 0065 | SC_V203_OPEN_CMD := V203.open_cmd;  |
| 0066 | SC_V203_NOT_SYMBOL := V203.not_symbol;  |
| 0067 |   |
| 0068 | SC_V204_BEAM_PASS := SC_V203_BEAM_PASS AND (NOT V204_CSD);                              |
| 0069 | SC_V204_OPEN := V204_OPN;   |
| 0070 | SC_V204_CLOSED := V204_CSD;   |
| 0071 | SC_V204_OPEN_PERMIT := V204.open_ena;   |
| 0072 | SC_V204_CLOSE_PERMIT := V204.close_ena;   |
| 0073 | SC_V204_OPEN_CMD := V204.open_cmd;  |
| 0074 | SC_V204_NOT_SYMBOL := V204.not_symbol;  |
| 0075 |   |
| 0076 | SC_RPV211_OPEN := RPV211_OPN;   |
| 0077 | SC_RPV211_CLOSED := RPV211_CSD;   |
| 0078 | SC_RPV211_OPEN_CMD := RPV211.open_cmd;  |
| 0079 |   |
| 0080 | SC_VENT211_SLOW_CMD := VPV211_SLOW.open_cmd;  |
| 0081 | SC_VENT211_FAST_CMD := VPV211_FAST.open_cmd;  |
| 0082 |   |
| 0083 | SC_TPV211_OPEN := TPV211_OPN;   |
| 0084 | SC_TPV211_CLOSED := TPV211_CSD;   |
| 0085 | SC_TPV211_OPEN_CMD := TPV211.open_cmd;  |
| 0086 |   |
| 0087 | SC_SLOTV211_OPEN := LLV211_OPN;   |
| 0088 | SC_SLOTV211_CLOSED := LLV211_CSD;   |
| 0089 | SC_SLOTV211_OPEN_PERMIT := LLV211.open_ena;   |
| 0090 | SC_SLOTV211_CLOSE_PERMIT := LLV211.close_ena;   |
| 0091 | SC_SLOTV211_OPEN_CMD := LLV211.open_cmd;  |
| 0092 | SC_SLOTV211_CLOSE_CMD := LLV211.close_cmd;  |
| 0093 | SC_SLOTV211_NOT_SYMBOL := LLV211.not_symbol;  |
| 0094 |   |
| 0095 | SC_RPV212_OPEN := RPV212_OPN;   |
| 0096 | SC_RPV212_CLOSED := RPV212_CSD;   |
| 0097 | SC_RPV212_OPEN_CMD := RPV212.open_cmd;  |
| 0098 |   |
| 0099 | SC_VENT212_SLOW_CMD := VPV212_SLOW.open_cmd;  |
| 0100 | SC_VENT212_FAST_CMD := VPV212_FAST.open_cmd;  |
| 0101 |   |
| 0102 | SC_TPV212_OPEN := TPV212_OPN;   |
| 0103 | SC_TPV212_CLOSED := TPV212_CSD;   |
| 0104 | SC_TPV212_OPEN_CMD := TPV212.open_cmd;  |
| 0105 |   |
| 0106 | SC_RP2110_ON := RP211_ON;   |
| 0107 | SC_RP2110_ON_CMD := RP211.on_cmd;   |
| 0108 |   |
| 0109 | SC_RP2111_ON := BP211_ON;   |
| 0110 | SC_RP2111_ON_CMD := BP211_ON_CMD;   |
| 0111 |   |
| 0112 | SC_TP201_VENT_ENABLE_CMD := VPV201.open_cmd;  |
| 0113 | SC_TP201_VENT_NOT_SYMBOL := VPV201.not_symbol;  |
| 0114 |   |
|      |   |

|      |  |
|------|--|
| 0115 | SC_TP201_OK := TP201_OK;   |
| 0116 | SC_TP201_ON := TP201_ON;   |
| 0117 | SC_TP201_OFF := NOT TP201.on_cmd;  |
| 0118 | SC_TP201_ON_PERMIT := TP201.on_ena;  |
| 0119 | SC_TP201_OFF_PERMIT := TP201.off_ena;                                      |
| 0120 | SC_TP201_ON_CMD := TP201.on_cmd;   |
| 0121 | SC_TP201_NOT_SYMBOL := TP201.not_symbol;                                   |
| 0122 |  |
| 0123 | SC_TP211_OK := TP211_OK;   |
| 0124 | SC_TP211_ON := TP211_READY;  |
| 0125 | SC_TP211_OFF := NOT TP211.on_cmd;  |
| 0126 |  |
| 0127 | SC_TP212_OK := TP212_OK;   |
| 0128 | SC_TP212_ON := TP212_READY;  |
| 0129 | SC_TP212_OFF := NOT TP212.on_cmd;  |
| 0130 |  |
| 0131 |  |
| 0132 | (* INTERLOCKS *)   |
| 0133 | SC_LL_ACTUATOR_OK := LL_ACTUATOR_OK;                                       |
| 0134 | SC_LL_PE101_PSL := LL_PE101_PSL_LO;  |
| 0135 | SC_LL_PE201_PSL := LL_PE201_PSL_LO;  |
| 0136 | SC_LL_V202_OPN := LL_V202_OPN;   |
| 0137 | SC_LL_PE202_PSL := LL_PE202_PSL_LO;  |
| 0138 | SC_LL_PE203_OK := LL_PE203_PIIY_OK;  |
| 0139 | SC_LL_PE203_PSL_LO := LL_PE203_PSL_LO;                                     |
| 0140 | SC_LL_TP201_OK := LL_TP201_OK;   |
| 0141 |  |
| 0142 | SC_LL_ES_CONFIG_OK := LL_ES_CONFIG_OK;                                     |
| 0143 | SC_LL_LL_CONFIG_OK := LL_LL_CONFIG_OK;                                     |
| 0144 | SC_LL_PE211_OK := LL_PE211_PIIY_OK;  |
| 0145 | SC_LL_PE212_OK := LL_PE212_PIIY_OK;  |
| 0146 | SC_LL_RP2111_ON := LL_BP211_ON;  |
| 0147 | SC_LL_PE2111_PSL := BP211_PSL; (* This is just in case LabView needs it *) |
| 0148 | SC_LL_TP211_TURBO_OK := LL_TP211_OK;                                       |
| 0149 | SC_LL_TP212_TURBO_OK := LL_TP212_OK;                                       |
| 0150 |  |
| 0151 |  |
| 0152 | (* PLC_OUT REGISTERS *)  |
| 0153 |  |
| 0154 |  |
| 0155 | (* Version Numbers *)  |
| 0156 | SC_VERSION_MAJOR := cVERSION_MAJOR;  |
| 0157 | SC_VERSION_MINOR := cVERSION_MINOR;  |
| 0158 |  |
| 0159 | (* Analog vacuum pressure *)   |
| 0160 | SC_PE101_PIIY := AI_PE101_PIIY;  |
| 0161 | SC_PE201_PIIY := AI_PE201_PIIY;  |
| 0162 | SC_PE202_PIIY := AI_PE202_PIIY;  |
| 0163 | SC_PE203_HI_PIIY := AI_PE203_HI_PIIY;                                      |
| 0164 | SC_PE203_LO_PIIY := AI_PE203_LO_PIIY;                                      |
| 0165 | SC_PE211_HI_PIIY := AI_PE211_HI_PIIY;                                      |
| 0166 | SC_PE211_LO_PIIY := AI_PE211_LO_PIIY;                                      |
| 0167 | SC_PE212_HI_PIIY := AI_PE212_HI_PIIY;                                      |
| 0168 | SC_PE212_LO_PIIY := AI_PE212_LO_PIIY;                                      |
| 0169 |  |
| 0170 | (* Current BR_REQ *)   |
| 0171 | CASE BR_REQUEST OF   |
| 0172 | BR_NONE_REQ:   |
| 0173 | SC_BR_CMD_VAL := 0;  |
| 0174 | BR_SINS1_REQ:  |
| 0175 | SC_BR_CMD_VAL := 1;  |
| 0176 | BR_SINS2_REQ:  |
| 0177 | SC_BR_CMD_VAL := 2;  |
| 0178 | BR_SINS3_REQ:  |
| 0179 | SC_BR_CMD_VAL := 3;  |
| 0180 | BR_YAG_REQ:  |
| 0181 | SC_BR_CMD_VAL := 4;  |
| 0182 | ELSE   |
| 0183 | (* should never get here *)  |
| 0184 | SC_BR_CMD_VAL := 0;  |
| 0185 | END_CASE;  |
| 0186 |  |
| 0187 | (* Current ES_REQ *)   |

|      |   |
|------|---|
| 0188 | CASE ES_REQUEST OF  |
| 0189 | PV_NONE_REQ:  |
| 0190 | SC_ES_CMD_VAL := 0;   |
| 0191 | PV_ISOLATE_REQ:   |
| 0192 | SC_ES_CMD_VAL := 1;   |
| 0193 | PV_PUMP_REQ:  |
| 0194 | SC_ES_CMD_VAL := 2;   |
| 0195 | PV_VENT_REQ:  |
| 0196 | SC_ES_CMD_VAL := 3;   |
| 0197 | ELSE  |
| 0198 | (* should never get here *)   |
| 0199 | SC_ES_CMD_VAL := 0;   |
| 0200 | END_CASE;   |
| 0201 |   |
| 0202 | (* Current LL_REQ *)  |
| 0203 | CASE LL_REQUEST OF  |
| 0204 | PV_NONE_REQ:  |
| 0205 | SC_LL_CMD_VAL := 0;   |
| 0206 | PV_ISOLATE_REQ:   |
| 0207 | SC_LL_CMD_VAL := 1;   |
| 0208 | PV_PUMP_REQ:  |
| 0209 | SC_LL_CMD_VAL := 2;   |
| 0210 | PV_VENT_REQ:  |
| 0211 | SC_LL_CMD_VAL := 3;   |
| 0212 | ELSE  |
| 0213 | (* should never get here *)   |
| 0214 | SC_LL_CMD_VAL := 0;   |
| 0215 | END_CASE;   |
| 0216 |   |
| 0217 |   |
| 0218 | (* Current BR_STATE *)  |
| 0219 | CASE BR_STATE OF  |
| 0220 | BR_ERROR:   |
| 0221 | SC_BR_STATE := 0;   |
| 0222 | BR_SINS1_READY:   |
| 0223 | (* SINS.1 *)  |
| 0224 | SC_BR_STATE := 1;   |
| 0225 | BR_SINS2_READY:   |
| 0226 | (* SINS.2 *)  |
| 0227 | SC_BR_STATE := 2;   |
| 0228 | BR_SINS3_READY:   |
| 0229 | (* SINS.3 *)  |
| 0230 | SC_BR_STATE := 3;   |
| 0231 | BR_YAG_READY:   |
| 0232 | (* YAG *)   |
| 0233 | SC_BR_STATE := 4;   |
| 0234 | BR_SINS1_SELECTING, BR_SINS2_SELECTING, BR_SINS3_SELECTING, BR_YAG_SELECTING: |
| 0235 | (* BUSY *)  |
| 0236 | SC_BR_STATE := 5;   |
| 0237 | ELSE  |
| 0238 | (* should never get here *)   |
| 0239 | SC_BR_STATE := 16#FFFF;   |
| 0240 | END_CASE;   |
| 0241 |   |
| 0242 | (* Current ES_STATE *)  |
| 0243 | CASE ES_STATE OF  |
| 0244 | PV_ERROR:   |
| 0245 | SC_ES_STATE := 0;   |
| 0246 | PV_ISOLATING:   |
| 0247 | SC_ES_STATE := 1;   |
| 0248 | PV_ISOLATED:  |
| 0249 | SC_ES_STATE := 2;   |
| 0250 | PV_SLOW_VENTING:  |
| 0251 | SC_ES_STATE := 3;   |
| 0252 | PV_FAST_VENTING:  |
| 0253 | SC_ES_STATE := 4;   |
| 0254 | PV_VENTED:  |
| 0255 | SC_ES_STATE := 5;   |
| 0256 | PV_RP_STARTING:   |
| 0257 | SC_ES_STATE := 6;   |
| 0258 | PV_RP_PUMPING:  |
| 0259 | SC_ES_STATE := 7;   |
| 0260 | PV_RP_PUMPED:   |

|             |   |
|-------------|---|
| 0261        | SC_ES_STATE := 8;   |
| 0262        | PV_TP_PUMPING:  |
| 0263        | SC_ES_STATE := 9;   |
| 0264        | PV_PUMPED:  |
| 0265        | SC_ES_STATE := 10;  |
| 0266        | ELSE  |
| 0267        | (* should never get here *)   |
| 0268        | SC_ES_STATE := 16#FFFF;   |
| 0269        | END_CASE;   |
| 0270        |   |
| 0271        | (* Current LL_STATE *)  |
| 0272        | CASE LL_STATE OF  |
| 0273        | PV_ERROR:   |
| 0274        | SC_LL_STATE := 0;   |
| 0275        | PV_ISOLATING:   |
| 0276        | SC_LL_STATE := 1;   |
| 0277        | PV_ISOLATED:  |
| 0278        | SC_LL_STATE := 2;   |
| 0279        | PV_SLOW_VENTING:  |
| 0280        | SC_LL_STATE := 3;   |
| 0281        | PV_FAST_VENTING:  |
| 0282        | SC_LL_STATE := 4;   |
| 0283        | PV_VENTED:  |
| 0284        | SC_LL_STATE := 5;   |
| 0285        | PV_RP_STARTING:   |
| 0286        | SC_LL_STATE := 6;   |
| 0287        | PV_RP_PUMPING:  |
| 0288        | SC_LL_STATE := 7;   |
| 0289        | PV_RP_PUMPED:   |
| 0290        | SC_LL_STATE := 8;   |
| 0291        | PV_TP_PUMPING:  |
| 0292        | SC_LL_STATE := 9;   |
| 0293        | PV_PUMPED:  |
| 0294        | SC_LL_STATE := 10;  |
| 0295        | ELSE  |
| 0296        | (* should never get here *)   |
| 0297        | SC_LL_STATE := 16#FFFF;   |
| 0298        | END_CASE;   |
| Valves (ST) |   |
| 0001        | (* Valve Control Logic *)   |
| 0002        |   |
| 0003        | (* V101 *)  |
| 0004        | V101.open_intlk := LL_PE101_PSL_LO AND LL_PE201_PSL_LO;                 |
| 0005        | V101.open_ena := TRUE;  |
| 0006        | V101.close_ena := TRUE;   |
| 0007        | V101.open_req := V101_OPN_REQ_SC;                                       |
| 0008        | V101.close_req := V101_CLS_REQ_SC;                                      |
| 0009        | V101();   |
| 0010        |   |
| 0011        | (* V201 *)  |
| 0012        | V201.open_intlk := LL_PE201_PSL_LO AND LL_V202_OPN AND LL_PE202_PSL_LO; |
| 0013        | V201.open_ena := TRUE;  |
| 0014        | V201.close_ena := TRUE;   |
| 0015        | V201.open_req := V201_OPN_REQ_SC;                                       |
| 0016        | V201.close_req := V201_CLS_REQ_SC;                                      |
| 0017        | V201();   |
| 0018        |   |
| 0019        | (* V203 *)  |
| 0020        | V203.open_intlk := LL_PE202_PSL_LO AND LL_TP201_OK AND LL_PE203_PSL_LO; |
| 0021        | V203.open_ena := TP201_READY;   |
| 0022        | V203.close_ena := TRUE;   |
| 0023        | V203.open_req := V203_OPN_REQ_SC;                                       |
| 0024        | V203.close_req := V203_CLS_REQ_SC;                                      |
| 0025        | V203();   |
| 0026        |   |
| 0027        | (* VPV201 *)  |
| 0028        | VPV201.open_intlk := V203_CSD AND V204_CSD AND NOT TP201_ON;            |
| 0029        | VPV201.open_ena := NOT TP201.on_cmd;                                    |
| 0030        | VPV201.close_ena := TRUE;   |
| 0031        | VPV201.open_req := TP201_VENT_ENABLE_REQ_SC;                            |
| 0032        | VPV201.close_req := TP201_VENT_DISABLE_REQ_SC;                          |
| 0033        | VPV201();   |
| 0034        |   |

|      |   |
|------|---|
| 0035 | (* V204 *)  |
| 0036 | V204.open_intlk := LL_PE203_PSL_LO AND LL_TP201_OK AND PE211_PSL_LO;                        |
| 0037 | V204.open_ena := (ES_STATE = PV_PUMPED) AND LLV211_CSD AND TP201_READY;                     |
| 0038 | V204.close_ena := TRUE;   |
| 0039 | V204.open_req := V204_OPN_REQ_SC;   |
| 0040 | V204.close_req := V204_CLS_REQ_SC OR V204_CLS_REQ_ES;                                       |
| 0041 | V204();   |
| 0042 |   |
| 0043 | (* LLV211 *)  |
| 0044 | LLV211.open_intlk := ((ES_STATE = PV_PUMPED) AND (LL_STATE = PV_PUMPED)) OR                 |
| 0045 | ((ES_STATE = PV_VENTED) AND (LL_STATE = PV_VENTED));  |
| 0046 | LLV211.open_ena := V204_CSD;  |
| 0047 | LLV211.close_intlk := LL211_ARM_RETRACTED OR LLV211_CSD;                                    |
| 0048 | LLV211.close_ena:= LL211_ARM_RETRACTED;   |
| 0049 | LLV211.open_req := LLV211_OPN_REQ_SC;   |
| 0050 | LLV211.close_req:= LLV211_CLS_REQ_SC OR LLV211_CLS_REQ_ES OR LLV211_CLS_REQ_LL;             |
| 0051 | LLV211();   |
| 0052 |   |
| 0053 | (* VPV211_SLOW *)   |
| 0054 | VPV211_SLOW.open_intlk := V204_CSD AND LLV211_CSD AND TPV211_CSD AND RPV211_CSD;            |
| 0055 | VPV211_SLOW.open_ena:= TRUE;  |
| 0056 | VPV211_SLOW.close_ena := TRUE;  |
| 0057 | VPV211_SLOW.open_req:= VPV211_SLOW_OPN_REQ_ES;  |
| 0058 | VPV211_SLOW.close_req := NOT VPV211_SLOW_OPN_REQ_ES;  |
| 0059 | VPV211_SLOW();  |
| 0060 |   |
| 0061 | (* VPV211_FAST *)   |
| 0062 | VPV211_FAST.open_intlk := V204_CSD AND LLV211_CSD AND TPV211_CSD AND RPV211_CSD;            |
| 0063 | VPV211_FAST.open_ena:= TRUE;  |
| 0064 | VPV211_FAST.close_ena := TRUE;  |
| 0065 | VPV211_FAST.open_req:= VPV211_FAST_OPN_REQ_ES;  |
| 0066 | VPV211_FAST.close_req := NOT VPV211_FAST_OPN_REQ_ES;  |
| 0067 | VPV211_FAST();  |
| 0068 |   |
| 0069 | (* RPV211 *)  |
| 0070 | RPV211.open_intlk := RP211_ON AND V204_CSD AND LLV211_CSD AND VPV211_CSD;                   |
| 0071 | RPV211.open_ena := NOT PE211_PSL_MIDLO AND RPV212_CSD;                                      |
| 0072 | RPV211.close_ena:= TRUE;  |
| 0073 | RPV211.open_req := RPV211_OPN_REQ_ES;   |
| 0074 | RPV211.close_req:= NOT RPV211_OPN_REQ_ES;   |
| 0075 | RPV211();   |
| 0076 |   |
| 0077 | (* TPV211 *)  |
| 0078 | TPV211.open_intlk := PE211_PSL_MIDLO AND LL_BP211_ON AND LL_PE211_PIIY_OK AND TP211.on_cmd; |
| 0079 | TPV211.open_ena := TRUE;  |
| 0080 | TPV211.close_ena:= V204_CSD AND LLV211_CSD;   |
| 0081 | TPV211.open_req := TPV211_OPN_REQ_ES;   |
| 0082 | TPV211.close_req:= NOT TPV211_OPN_REQ_ES;   |
| 0083 | TPV211();   |
| 0084 |   |
| 0085 | (* VPV212_SLOW *)   |
| 0086 | VPV212_SLOW.open_intlk := LLV211_CSD AND TPV212_CSD AND RPV212_CSD;                         |
| 0087 | VPV212_SLOW.open_ena:= TRUE;  |
| 0088 | VPV212_SLOW.close_ena := TRUE;  |
| 0089 | VPV212_SLOW.open_req:= VPV212_SLOW_OPN_REQ_LL;  |
| 0090 | VPV212_SLOW.close_req := NOT VPV212_SLOW_OPN_REQ_LL;  |
| 0091 | VPV212_SLOW();  |
| 0092 |   |
| 0093 | (* VPV212_FAST *)   |
| 0094 | VPV212_FAST.open_intlk := LLV211_CSD AND TPV212_CSD AND RPV212_CSD;                         |
| 0095 | VPV212_FAST.open_ena:= TRUE;  |
| 0096 | VPV212_FAST.close_ena := TRUE;  |
| 0097 | VPV212_FAST.open_req:= VPV212_FAST_OPN_REQ_LL;  |
| 0098 | VPV212_FAST.close_req := NOT VPV212_FAST_OPN_REQ_LL;  |
| 0099 | VPV212_FAST();  |
| 0100 |   |
| 0101 | (* RPV212 *)  |
| 0102 | RPV212.open_intlk := RP211_ON AND LLV211_CSD AND VPV212_CSD;                                |
| 0103 | RPV212.open_ena := NOT PE212_PSL_MIDLO AND RPV211_CSD;                                      |
| 0104 | RPV212.close_ena:= TRUE;  |
| 0105 | RPV212.open_req := RPV212_OPN_REQ_LL;   |
| 0106 | RPV212.close_req:= NOT RPV212_OPN_REQ_LL;   |
| 0107 | RPV212();   |



|                     |  |
|---------------------|--|
| 0108                |  |
| 0109                | (* TPV212 *)   |
| 0110                | TPV212.open_intlk := PE212_PSL_MIDLO AND LL_BP211_ON AND LL_PE212_Piy_OK AND TP212.on_cmd; |
| 0111                | TPV212.open_ena := TRUE;   |
| 0112                | TPV212.close_ena:= LLV211_CSD;   |
| 0113                | TPV212.open_req := TPV212_OPN_REQ_LL;  |
| 0114                | TPV212.close_req:= NOT TPV212_OPN_REQ_LL;  |
| 0115                | TPV212();  |
| 0116                |  |
| RP_FB (FB-ST)       |  |
| 0001                | (* ROUGH PUMP CONTROL *)   |
| 0002                | FUNCTION_BLOCK RP_FB   |
| 0003                | VAR_INPUT  |
| 0004                | on_ena: BOOL;  |
| 0005                | off_ena: BOOL;   |
| 0006                |  |
| 0007                | on_req : BOOL;   |
| 0008                | off_req : BOOL;  |
| 0009                | END_VAR  |
| 0010                | VAR_OUTPUT   |
| 0011                | on_cmd: BOOL;  |
| 0012                | not_symbol: BOOL;  |
| 0013                | END_VAR  |
| 0014                | VAR  |
| 0015                | END_VAR  |
| 0001                | on_cmd := (NOT off_req OR NOT off_ena) AND   |
| 0002                | ((on_ena AND on_req) OR on_cmd);   |
| 0003                |  |
| 0004                | not_symbol := (on_cmd AND NOT off_ena) OR (NOT on_cmd AND NOT on_ena);                     |
| TP_FB (FB-ST)       |  |
| 0001                | FUNCTION_BLOCK TP_FB   |
| 0002                | VAR_INPUT  |
| 0003                | on_intlk : BOOL;   |
| 0004                | on_ena : BOOL;   |
| 0005                | off_ena : BOOL;  |
| 0006                |  |
| 0007                | on_req : BOOL;   |
| 0008                | off_req : BOOL;  |
| 0009                | END_VAR  |
| 0010                | VAR_OUTPUT   |
| 0011                | on_cmd : BOOL;   |
| 0012                | not_symbol : BOOL;   |
| 0013                | END_VAR  |
| 0014                | VAR  |
| 0015                | END_VAR  |
| 0001                | on_cmd := on_intlk AND   |
| 0002                | (NOT (off_ena AND off_req)) AND  |
| 0003                | ((on_ena AND on_req) OR on_cmd);   |
| 0004                |  |
| 0005                | not_symbol := (on_cmd AND NOT off_ena) OR  |
| 0006                | (NOT on_cmd AND NOT (on_intlk AND on_ena));  |
| VALVE_BI_FB (FB-ST) |  |
| 0001                | FUNCTION_BLOCK VALVE_BI_FB   |
| 0002                | VAR_INPUT  |
| 0003                | open_intlk : BOOL; (* open command interlock *)  |
| 0004                | open_ena : BOOL; (* open command enable *)   |
| 0005                | close_intlk : BOOL; (* close command interlock *)  |
| 0006                | close_ena : BOOL; (* close command enable *)   |
| 0007                |  |
| 0008                | open_req : BOOL; (* open command request *)  |
| 0009                | close_req : BOOL; (* close command request *)  |
| 0010                | END_VAR  |
| 0011                | VAR_OUTPUT   |
| 0012                | open_cmd : BOOL; (* open command *)  |
| 0013                | close_cmd : BOOL; (* close command *)  |
| 0014                | not_symbol : BOOL; (* state change prohibited *)   |
| 0015                | END_VAR  |
| 0016                | VAR  |
| 0017                | END_VAR  |
| 0001                |  |
| 0002                | open_cmd:= open_intlk AND  |

|                  |                         |  |
|------------------|-------------------------|--|
| 0003             |                         | (NOT (close_ena AND close_req)) AND                        |
| 0004             |                         | ((open_ena AND open_req) OR open_cmd);                     |
| 0005             |                         |  |
| 0006             | close_cmd               | := close_intlk AND   |
| 0007             |                         | (NOT (open_ena AND open_req)) AND                          |
| 0008             |                         | ((close_ena AND close_req) OR close_cmd);                  |
| 0009             |                         |  |
| 0010             | not_symbol              | := (open_cmd AND NOT (close_intlk AND close_ena)) OR       |
| 0011             |                         | (close_cmd AND NOT (open_intlk AND open_ena));             |
| VALVE_FB (FB-ST) |                         |  |
| 0001             | FUNCTION_BLOCK VALVE_FB |  |
| 0002             | VAR_INPUT               |  |
| 0003             | open_intlk              | : BOOL; (* open command interlock *)                       |
| 0004             | open_ena                | : BOOL; (* open command enable *)                          |
| 0005             | close_ena               | : BOOL; (* close command enable *)                         |
| 0006             |                         |  |
| 0007             | open_req                | : BOOL; (* open command request *)                         |
| 0008             | close_req               | : BOOL; (* close command request *)                        |
| 0009             | END_VAR                 |  |
| 0010             | VAR_OUTPUT              |  |
| 0011             | open_cmd                | : BOOL; (* open command *)                                 |
| 0012             | not_symbol              | : BOOL; (* state change prohibited *)                      |
| 0013             | END_VAR                 |  |
| 0014             | VAR                     |  |
| 0015             | END_VAR                 |  |
| 0001             | open_cmd:=              | open_intlk AND   |
| 0002             |                         | (NOT (close_ena AND close_req)) AND                        |
| 0003             |                         | ((open_ena AND open_req) OR open_cmd);                     |
| 0004             |                         |  |
| 0005             | not_symbol              | := (open_cmd AND NOT close_ena) OR                         |
| 0006             |                         | (NOT open_cmd AND NOT (open_intlk AND open_ena));          |
| Actuator         |                         |  |
| 0001             | TYPE Actuator :         |  |
| 0002             | STRUCT                  |  |
| 0003             | awStatus:               | ARRAY [0..9] OF WORD; (* actuator status words, incoming*) |
| 0004             | wCommand:               | WORD; (* actuator control command, outgoing *)             |
| 0005             | wTarget                 | : WORD; (* actuator target position, outgoing *)           |
| 0006             |                         |  |
| 0007             | oMBMaster               | : ETHERNET_MODBUSMASTER_TCP;                               |
| 0008             | tonConnect              | : TON; (* connection delay timer *)                        |
| 0009             |                         |  |
| 0010             | xConnect:               | BOOL; (* initiate TCP connection *)                        |
| 0011             | xSend                   | : BOOL; (* Initiate MB transaction *)                      |
| 0012             | xBusy                   | : BOOL; (* Transaction in progress *)                      |
| 0013             | xDataReady              | : BOOL; (* Transaction data ready *)                       |
| 0014             |                         |  |
| 0015             | wState                  | : WORD := 10; (* sequencer state *)                        |
| 0016             | END_STRUCT              |  |
| 0017             | END_TYPE                |  |
| BR_REQ           |                         |  |
| 0001             | TYPE BR_REQ :           |  |
| 0002             | (                       |  |
| 0003             | BR_NONE_REQ             | := 0,  |
| 0004             | BR_SINS1_REQ,           |  |
| 0005             | BR_SINS2_REQ,           |  |
| 0006             | BR_SINS3_REQ,           |  |
| 0007             | BR_YAG_REQ              |  |
| 0008             | );                      |  |
| 0009             | END_TYPE                |  |
| BR_ST            |                         |  |
| 0001             | TYPE BR_ST :            |  |
| 0002             | (                       |  |
| 0003             | BR_ERROR                | := 0,  |
| 0004             | BR_SINS1_SELECTING,     |  |
| 0005             | BR_SINS1_READY,         |  |
| 0006             | BR_SINS2_SELECTING,     |  |
| 0007             | BR_SINS2_READY,         |  |
| 0008             | BR_SINS3_SELECTING,     |  |
| 0009             | BR_SINS3_READY,         |  |
| 0010             | BR_YAG_SELECTING,       |  |
| 0011             | BR_YAG_READY            |  |

0012);

0013END\_TYPE

PV\_REQ

0001TYPE PV\_REQ :

0002(

0003PV\_NONE\_REQ := 0,

0004PV\_ISOLATE\_REQ,

0005PV\_PUMP\_REQ,

0006PV\_VENT\_REQ

0007);

0008END\_TYPE

PV\_ST

0001TYPE PV\_ST :

0002(

0003PV\_ERROR := 0,

0004PV\_ISOLATING,

0005PV\_ISOLATED,

0006PV\_SLOW\_VENTING,

0007PV\_FAST\_VENTING,

0008PV\_VENTED,

0009PV\_RP\_STARTING,

0010PV\_RP\_PUMPING,

0011PV\_RP\_PUMPED,

0012PV\_TP\_PUMPING,

0013PV\_PUMPED

0014);

0015END\_TYPE

ACTUATOR\_VISU

ACTUATORS

|             |        | Request |        |     | Readback | Position | Target |
|-------------|--------|---------|--------|-----|----------|----------|--------|
| BR_SELECTOR | SINS.1 | SINS.2  | SINS.3 | YAG | %d       | %d       | %d     |

AUTO\_VISU

AUTO STATE MACHINES

|             |      | Request |        |        |     | CMD | EXT VAL | INT VAL |
|-------------|------|---------|--------|--------|-----|-----|---------|---------|
| BR_SELECTOR | NONE | SINS.1  | SINS.2 | SINS.3 | YAG | %d  | %d      | %s      |
| ES_PUMPVENT | NONE | ISOLATE | PUMP   | VENT   |     | %d  | %d      | %s      |
| LL_PUMPVENT | NONE | ISOLATE | PUMP   | VENT   |     | %d  | %d      | %s      |

INTLKS\_VISU

Interlocks

EPS Reset

Reset

Branchline

Endstation

|             |  |              |  |
|-------------|--|--------------|--|
| ACTUATOR_OK |  | ES_CONFIG_OK |  |
| PE101 PSL   |  | LL_CONFIG_OK |  |
| PE201 PSL   |  | PE211_OK     |  |

0000 OK

0001 OK

0002 OK

0003 OK

0004 OK

0005 OK

0006 OK

0007 OK

0008 OK

0009 OK

0010 OK

0011 OK

0012 OK

0013 OK

0014 OK

0015 OK

V202\_OPN

PE2T2\_OK

PE202\_PSL

RP2111\_ON

PE203\_OK

TP211\_OK

PE203\_PSL\_LO

TP212\_OK

TP201\_OK

PUMPS\_VISU

PUMPS

Requests

Name

PMT

ON

On Cmd

On

Off

RP2110

RP2111

TP201

TP211

TP212

SIGNALS\_VISU

Signals

BR

OK

PE101\_PSL

PE201\_PSL

PE202\_PSL

PE203

OK

PSL\_HI

PSL\_MIDHI

PSL\_MIDLO

PSL\_LO

PE211

OK

PSL\_HI

PSL\_MIDHI

PSL\_MIDLO

PSL\_LO

PE212

OK

PSL\_HI

PSL\_MIDHI

PSL\_MIDLO

PSL\_LO

RP2110

ON

PSL

TP201

TURBO\_OK

AT\_SPEED

TP211

TURBO\_OK

AT\_SPEED

TP212

TURBO\_OK

AT\_SPEED

RP2111

ON

PSL

LL211

LID\_CLOSED

ARM\_RETRACTED

VALVES\_VISU

VALVES

Requests

Name

PMT

OPN

CSD

Commands

Open

Close

V100

Open

Close

V101

OpenBeam

Open

Close

V201

OpenBeam

V202

Beam

|        |         |          |  |  |  |         |  |       |  |
|--------|---------|----------|--|--|--|---------|--|-------|--|
|        |         | V202     |  |  |  |         |  |       |  |
| Open   | Close   | V203     |  |  |  | Open    |  | Beam  |  |
| Enable | Disable | VENT201  |  |  |  | Enabled |  |       |  |
| Open   | Close   | V204     |  |  |  | Open    |  | Beam  |  |
|        |         | VENT211  |  |  |  | Slow    |  | Fast  |  |
|        |         | RPV211   |  |  |  | Open    |  |       |  |
|        |         | TPV211   |  |  |  | Open    |  |       |  |
| Open   | Close   | SLOTV211 |  |  |  | Open    |  | Close |  |
|        |         | VENT212  |  |  |  | Slow    |  | Fast  |  |
|        |         | RPV212   |  |  |  | Open    |  |       |  |
|        |         | TPV212   |  |  |  | Open    |  |       |  |

Global\_Variables

|      |                   |                                |
|------|-------------------|--------------------------------|
| 0001 | VAR_GLOBAL        |                                |
| 0002 | xActuatorReady    | : BOOL; (* In Position *)      |
| 0003 | wActuatorStatus   | : WORD; (* Current Status *)   |
| 0004 | wActuatorPosition | : WORD; (* Current Position *) |
| 0005 | wActuatorAlarm    | : WORD; (* Current Alarm *)    |
| 0006 | END_VAR           |                                |
| 0007 | VAR_GLOBAL RETAIN |                                |
| 0008 | wActuatorTarget   | : WORD; (* Target Position *)  |
| 0009 | END_VAR           |                                |

Variable\_Configuration

|      |            |
|------|------------|
| 0001 | VAR_CONFIG |
| 0002 | END_VAR    |

Global Variables 0

|      |            |
|------|------------|
| 0001 | VAR_GLOBAL |
| 0002 | END_VAR    |

Globale\_Variablen

|      |            |
|------|------------|
| 0001 | VAR_GLOBAL |
| 0002 | END_VAR    |

Version

|      |                       |
|------|-----------------------|
| 0001 | VAR_GLOBAL CONSTANT   |
| 0002 | rVersion:REAL:=1.001; |
| 0003 | END_VAR               |

Globale\_Variablen

|      |   |
|------|---|
| 0001 | VAR_GLOBAL CONSTANT   |
| 0002 | SOCKET_INVALID:DINT:=-1;  |
| 0003 |   |
| 0004 | (* AddressFamily *)   |
| 0005 | SOCKET_AF_UNSPEC:INT:= 0; (* unspecified *)                       |
| 0006 | SOCKET_AF_LOCAL:INT:= 1; (* local to host (pipes, portals) *)     |
| 0007 | SOCKET_AF_UNIX:INT:=SOCKET_AF_LOCAL; (* backward compatibility *) |
| 0008 | SOCKET_AF_INET:INT:=2; (* internetwork: UDP, TCP, etc. *)         |
| 0009 | SOCKET_AF_IMPLINK:INT:=3; (* arpanet imp addresses *)             |
| 0010 | SOCKET_AF_PUP:INT:=4; (* pup protocols: e.g. BSP *)               |
| 0011 | SOCKET_AF_CHAOS:INT:=5; (* mit CHAOS protocols *)                 |
| 0012 | SOCKET_AF_NS:INT:=6; (* XEROX NS protocols *)                     |
| 0013 | SOCKET_AF_ISO:INT:=7; (* ISO protocols *)                         |
| 0014 | SOCKET_AF_OSI:INT:=SOCKET_AF_ISO;                                 |
| 0015 | SOCKET_AF_ECMA:INT:=8; (* european computer manufacturers *)      |
| 0016 | SOCKET_AF_DATAKIT:INT:=9; (* datakit protocols *)                 |
| 0017 | SOCKET_AF_CCITT:INT:=10; (* CCITT protocols, X.25 etc *)          |

|      |  |  |
|------|--|--|
| 0018 | SOCKET_AF_SNA:INT:=11;   | (* IBM SNA *)                              |
| 0019 | SOCKET_AF_DECnet:INT:=12;  | (* DECnet *)                               |
| 0020 | SOCKET_AF_DLI:INT:=13;   | (* DEC Direct data link interface *)       |
| 0021 | SOCKET_AF_LAT:INT:= 14;  | (* LAT *)                                  |
| 0022 | SOCKET_AF_HYLINK:INT:=15;  | (* NSC Hyperchannel *)                     |
| 0023 | SOCKET_AF_APPLETALK:INT:=16;   | (* Apple Talk *)                           |
| 0024 | SOCKET_AF_ROUTE:INT:=17;   | (* Internal Routing Protocol *)            |
| 0025 | SOCKET_AF_LINK:INT:=18;  | (* Link layer interface *)                 |
| 0026 | SOCKET_pseudo_AF_XTP:INT:=19;  | (* eXpress Transfer Protocol (no AF) *)    |
| 0027 | SOCKET_AF_COIP:INT:=20;  | (* connection-oriented IP, aka ST II *)    |
| 0028 | SOCKET_AF_CNT:INT:=21;   | (* Computer Network Technology *)          |
| 0029 | SOCKET_pseudo_AF_RTIP:INT:=22;                                       | (* Help Identify RTIP packets *)           |
| 0030 | SOCKET_AF_IPX:INT:=23;   | (* Novell Internet Protocol *)             |
| 0031 | SOCKET_AF_SIP:INT:=24;   | (* Simple Internet Protocol *)             |
| 0032 | SOCKET_pseudo_AF_PIP:INT:=25;  | (* Help Identify PIP packets *)            |
| 0033 | SOCKET_AF_MAX:INT:=26;   |  |
| 0034 | SOCKET_AF_INET_BSD:INT:=100;   | (* BSD-specific INET af *)                 |
| 0035 | SOCKET_AF_INET_STREAMS:INT:=101;                                     | (* STREAMS-specific INET af *)             |
| 0036 |  |  |
| 0037 | (* Level number for (get/set)sockopt() to apply to socket itself. *) |  |
| 0038 | SOCKET_SOL:WORD:=16#ffff;  |  |
| 0039 |  |  |
| 0040 | (* Socket options *)   |  |
| 0041 | SOCKET_SO_DEBUG:DINT:=16#0001;                                       | (* turn on debugging info recording *)     |
| 0042 | SOCKET_SO_ACCEPTCONN:DINT:=16#0002;                                  | (* socket has had listen() *)              |
| 0043 | SOCKET_SO_REUSEADDR:DINT:=16#0004;                                   | (* allow local address reuse *)            |
| 0044 | SOCKET_SO_KEEPAIVE:DINT:=16#0008;                                    | (* keep connections alive *)               |
| 0045 | SOCKET_SO_DONTROUTE:DINT:=16#0010;                                   | (* just use interface addresses *)         |
| 0046 | SOCKET_SO_BROADCAST:DINT:=16#0020;                                   | (* permit sending of broadcast msgs *)     |
| 0047 | SOCKET_SO_USELOOPBACK:DINT:=16#0040;                                 | (* bypass hardware when possible *)        |
| 0048 | SOCKET_SO_LINGER:DINT:=16#0080;                                      | (* linger on close if data present *)      |
| 0049 | SOCKET_SO_OOBINLINE:DINT:=16#0100;                                   | (* leave received OOB data in line *)      |
| 0050 | SOCKET_SO_REUSEPORT:DINT:=16#0200;                                   | (* allow local address & port reuse *)     |
| 0051 | SOCKET_SO_SNDBUF:DINT:=16#1001;                                      | (* send buffer size *)                     |
| 0052 | SOCKET_SO_RCVBUF:DINT:= 16#1002;                                     | (* receive buffer size *)                  |
| 0053 | SOCKET_SO_SNDLOWAT:DINT:=16#1003;                                    | (* send low-water mark *)                  |
| 0054 | SOCKET_SO_RCVLOWAT:DINT:=16#1004;                                    | (* receive low-water mark *)               |
| 0055 | SOCKET_SO_SNDTIMEO:DINT:=16#1005;                                    | (* send timeout *)                         |
| 0056 | SOCKET_SO_RCVTIMEO:DINT:=16#1006;                                    | (* receive timeout *)                      |
| 0057 | SOCKET_SO_ERROR:DINT:=16#1007;                                       | (* get error status and clear *)           |
| 0058 | SOCKET_SO_TYPE:DINT:=16#1008;  | (* get socket type *)                      |
| 0059 | SOCKET_SO_PROTOCOL:DINT:=16#1009;                                    | (* get/set protocol type *)                |
| 0060 | (* TCPIP socket options *)   |  |
| 0061 | SOCKET_TCP_NODELAY:DINT:=16#01;                                      | (* don't delay send to coalesce packets *) |
| 0062 | SOCKET_TCP_MAXSEG:DINT:=16#02;                                       | (* set maximum segment size *)             |
| 0063 |  |  |
| 0064 | (* Socket types *)   |  |
| 0065 | SOCKET_STREAM:DINT:=1;   | (* stream socket *)                        |
| 0066 | SOCKET_DGRAM:DINT:=2;  | (* datagram socket *)                      |
| 0067 | SOCKET_RAW:DINT:=3;  | (* raw-protocol interface *)               |
| 0068 | SOCKET_RDM:DINT:=4;  | (* reliably-delivered message *)           |
| 0069 | SOCKET_SEQPACKET:DINT:=5;  | (* sequenced packet stream *)              |
| 0070 |  |  |
| 0071 | (* Inet address definitions *)                                       |  |
| 0072 | SOCKET_INADDR_ANY:UDINT:=16#00000000;                                |  |
| 0073 | SOCKET_INADDR_LOOPBACK:UDINT:=16#7f000001;                           |  |
| 0074 | SOCKET_INADDR_BROADCAST:UDINT:=16#ffffffff;                          |  |
| 0075 | SOCKET_INADDR_NONE:UDINT:=16#ffffffff;                               |  |
| 0076 |  |  |
| 0077 | (* Protocols *)  |  |
| 0078 | SOCKET_IPPROTO_IP:DINT:=0;   | (* dummy for IP *)                         |
| 0079 | SOCKET_IPPROTO_ICMP:DINT:=1;   | (* control message protocol *)             |
| 0080 | SOCKET_IPPROTO_IGMP:DINT:=2;   | (* group management protocol *)            |
| 0081 | SOCKET_IPPROTO_GGP:DINT:=3;  | (* gateway^2 (deprecated) *)               |
| 0082 | SOCKET_IPPROTO_TCP:DINT:=6;  | (* tcp *)                                  |
| 0083 | SOCKET_IPPROTO_PUP:DINT:=12;   | (* pup *)                                  |
| 0084 | SOCKET_IPPROTO_UDP:DINT:=17;   | (* user datagram protocol *)               |
| 0085 | SOCKET_IPPROTO_IDP:DINT:=22;   | (* xns idp *)                              |
| 0086 | SOCKET_IPPROTO_ND:DINT:=77;  | (* UNOFFICIAL net disk proto *)            |
| 0087 | SOCKET_IPPROTO_RAW:DINT:=255;  | (* raw IP packet *)                        |
| 0088 | SOCKET_IPPROTO_MAX:DINT:=256;  |  |
| 0089 |  |  |
| 0090 | (* Flags *)  |  |

|      |   |                                       |
|------|---|---------------------------------------|
| 0091 | SOCKET_MSG_OOB:DINT:=16#1;  | (* process out-of-band data *)        |
| 0092 | SOCKET_MSG_PEEK:DINT:=16#2;   | (* peek at incoming message *)        |
| 0093 | SOCKET_MSG_DONTROUTE:DINT:=16#4;(* send without using routing tables *) |                                       |
| 0094 |   |                                       |
| 0095 | (* Ioctl commands *)  |                                       |
| 0096 | SOCKET_FIONREAD:DINT:=1;  | (* get num chars available to read *) |
| 0097 | SOCKET_FIONBIO:DINT:=2;   | (* set to non-blocking *)             |
| 0098 |   |                                       |
| 0099 | (* For SysSockSelect() descriptors *)                                   |                                       |
| 0100 | SOCKET_FD_SETSIZE :DINT := 64;  |                                       |
| 0101 | MAX_SOCKET_FD_SETSIZE : DINT := 63;                                     |                                       |
| 0102 | END_VAR   |                                       |

Globale\_Variablen

|      |            |
|------|------------|
| 0001 | VAR_GLOBAL |
| 0002 | END_VAR    |

Alarm configuration

|                          |                     |
|--------------------------|---------------------|
| <input type="checkbox"/> | Alarm configuration |
| <input type="checkbox"/> | Alarm classes       |
| <input type="checkbox"/> | System              |

PLC Configuration

\*Hardware configuration (Id.: 20100000001)

Node number: -1  
Input address: %IB0  
Output address: %QB0  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1

\*K-Bus (\* WAGO 750-881 PFC ETHERNET \*) [FIX] (Id.: 11994)

Node number: 0  
Input address: %IB0  
Output address: %QB0  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1

\*0750-0459 4 AI 0-10V DC s.e.[VAR] (Id.: 2000008004)

Node number: 0  
Input address: %IB0  
Output address: %QB0  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
PAAssignment: PLC  
Channels:  
AI\_PE101\_PIIY AT %IW0: WORD; (\* SINS.1 Branchline UHV pressure \*) [CHANNEL (I)]  
AI\_PE201\_PIIY AT %IW1: WORD; (\* M201 UHV range pressure \*) [CHANNEL (I)]  
AI\_PE202\_PIIY AT %IW2: WORD; (\* M202 UHV range pressure \*) [CHANNEL (I)]  
AI\_SPARE04 AT %IW3: WORD; (\* Ch\_4 Input word \*) [CHANNEL (I)]

\*0750-0459 4 AI 0-10V DC s.e.[VAR] (Id.: 2000008004)

Node number: 1  
Input address: %IB1  
Output address: %QB1  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
PAAssignment: PLC  
Channels:  
AI\_PE203\_HI\_PIIY AT %IW4: WORD; (\* FTR201 High range pressure \*) [CHANNEL (I)]  
AI\_PE203\_LO\_PIIY AT %IW5: WORD; (\* FTR201 Low range pressure \*) [CHANNEL (I)]  
AI\_PE211\_HI\_PIIY AT %IW6: WORD; (\* ES211 High range pressure \*) [CHANNEL (I)]  
AI\_PE211\_LO\_PIIY AT %IW7: WORD; (\* ES211 Low range pressure \*) [CHANNEL (I)]

\*0750-0459 4 AI 0-10V DC s.e.[VAR] (Id.: 2000008004)

Node number: 2  
Input address: %IB2

Output address: %QB2  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:

PAAssignment: PLC

Channels:

AI\_PE212\_HI\_PII AT %IW8: WORD; (\* LL211 High range pressure \*) [CHANNEL (I)]  
AI\_PE212\_LO\_PII AT %IW9: WORD; (\* LL211 Low range pressure \*) [CHANNEL (I)]  
AI\_SPARE11 AT %IW10: WORD; (\* Ch\_3 Input word \*) [CHANNEL (I)]  
AI\_SPARE12 AT %IW11: WORD; (\* Ch\_4 Input word \*) [CHANNEL (I)]

\*0750-0459 4 AI 0-10V DC s.e.[VAR] (Id.: 2000008004)

Node number: 3  
Input address: %IB3  
Output address: %QB3  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:

PAAssignment: PLC

Channels:

AI\_SPARE13 AT %IW12: WORD; (\* Ch\_1 Input word \*) [CHANNEL (I)]  
AI\_SPARE14 AT %IW13: WORD; (\* Ch\_2 Input word \*) [CHANNEL (I)]  
AI\_SPARE15 AT %IW14: WORD; (\* Ch\_3 Input word \*) [CHANNEL (I)]  
AI\_SPARE16 AT %IW15: WORD; (\* Ch\_4 Input word \*) [CHANNEL (I)]

\*0750-0530 8 DO 24 V DC 0.5A[VAR] (Id.: 2000010008)

Node number: 4  
Input address: %IB4  
Output address: %QB4  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:

PAAssignment: PLC

Channels:

DO\_RP2110\_ON\_CMD AT %QX0.0: BOOL; (\* Ch\_1 Digital output \*) [CHANNEL (Q)]  
DO\_RP2111\_ON\_CMD AT %QX0.1: BOOL; (\* Ch\_2 Digital output \*) [CHANNEL (Q)]  
DO\_V101\_OPEN\_CMD AT %QX0.2: BOOL; (\* Ch\_3 Digital output \*) [CHANNEL (Q)]  
DO\_V201\_OPEN\_CMD AT %QX0.3: BOOL; (\* Ch\_4 Digital output \*) [CHANNEL (Q)]  
DO\_V203\_OPEN\_CMD AT %QX0.4: BOOL; (\* Ch\_5 Digital output \*) [CHANNEL (Q)]  
DO\_V204\_OPEN\_CMD AT %QX0.5: BOOL; (\* Ch\_6 Digital output \*) [CHANNEL (Q)]  
DO\_TP201\_ON\_CMD AT %QX0.6: BOOL; (\* Ch\_7 Digital output \*) [CHANNEL (Q)]  
DO\_TP201\_VENT\_ENABLE\_CMD AT %QX0.7: BOOL; (\* Ch\_8 Digital output \*) [CHANNEL (Q)]

\*0750-0530 8 DO 24 V DC 0.5A[VAR] (Id.: 2000010008)

Node number: 5  
Input address: %IB5  
Output address: %QB5  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:

PAAssignment: PLC

Channels:

DO\_TP211\_ON\_CMD AT %QX0.8: BOOL; (\* Ch\_1 Digital output \*) [CHANNEL (Q)]  
DO\_TPV211\_OPEN\_CMD AT %QX0.9: BOOL; (\* Ch\_2 Digital output \*) [CHANNEL (Q)]  
DO\_RPV211\_OPEN\_CMD AT %QX0.10: BOOL; (\* Ch\_3 Digital output \*) [CHANNEL (Q)]  
DO\_VENT211\_SLOW\_CMD AT %QX0.11: BOOL; (\* Ch\_4 Digital output \*) [CHANNEL (Q)]  
DO\_VENT211\_FAST\_CMD AT %QX0.12: BOOL; (\* Ch\_5 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_14 AT %QX0.13: BOOL; (\* Ch\_6 Digital output \*) [CHANNEL (Q)]  
DO\_SLOTV211\_OPEN\_CMD AT %QX0.14: BOOL; (\* Ch\_7 Digital output \*) [CHANNEL (Q)]  
DO\_SLOTV211\_CLOSE\_CMD AT %QX0.15: BOOL; (\* Ch\_8 Digital output \*) [CHANNEL (Q)]

\*0750-0530 8 DO 24 V DC 0.5A[VAR] (Id.: 2000010008)

Node number: 6  
Input address: %IB6  
Output address: %QB6  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:



PAAssignment: PLC

Channels:

DO\_TP212\_ON\_CMD AT %QX1.0: BOOL; (\* Ch\_1 Digital output \*) [CHANNEL (Q)]  
DO\_TPV212\_OPEN\_CMD AT %QX1.1: BOOL; (\* Ch\_2 Digital output \*) [CHANNEL (Q)]  
DO\_RPV212\_OPEN\_CMD AT %QX1.2: BOOL; (\* Ch\_3 Digital output \*) [CHANNEL (Q)]  
DO\_VENT212\_SLOW\_CMD AT %QX1.3: BOOL; (\* Ch\_4 Digital output \*) [CHANNEL (Q)]  
DO\_VENT212\_FAST\_CMD AT %QX1.4: BOOL; (\* Ch\_5 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_22 AT %QX1.5: BOOL; (\* Ch\_6 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_23 AT %QX1.6: BOOL; (\* Ch\_7 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_24 AT %QX1.7: BOOL; (\* Ch\_8 Digital output \*) [CHANNEL (Q)]

\*0750-0530 8 DO 24 V DC 0.5A[VAR] (Id.: 2000010008)

Node number: 7

Input address: %IB7

Output address: %QB7

Diagnostic address: %MB0

Download: 1

AutoAdr: 1

Parameter:

PAAssignment: PLC

Channels:

DO\_SPARE\_25 AT %QX1.8: BOOL; (\* Ch\_1 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_26 AT %QX1.9: BOOL; (\* Ch\_2 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_27 AT %QX1.10: BOOL; (\* Ch\_3 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_28 AT %QX1.11: BOOL; (\* Ch\_4 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_29 AT %QX1.12: BOOL; (\* Ch\_5 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_30 AT %QX1.13: BOOL; (\* Ch\_6 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_31 AT %QX1.14: BOOL; (\* Ch\_7 Digital output \*) [CHANNEL (Q)]  
DO\_SPARE\_32 AT %QX1.15: BOOL; (\* Ch\_8 Digital output \*) [CHANNEL (Q)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 8

Input address: %IB8

Output address: %QB8

Diagnostic address: %MB0

Download: 1

AutoAdr: 1

Parameter:

PAAssignment: PLC

Channels:

DI\_PE101\_PSL\_LO AT %IX16.0: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
DI\_PE201\_PSL\_LO AT %IX16.1: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
DI\_PE202\_PSL\_LO AT %IX16.2: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
DI\_SPARE\_04 AT %IX16.3: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
DI\_RP2110\_ON AT %IX16.4: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
DI\_RP2111\_ON AT %IX16.5: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
DI\_PE2110\_PSL AT %IX16.6: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
DI\_PE2111\_PSL AT %IX16.7: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 9

Input address: %IB9

Output address: %QB9

Diagnostic address: %MB0

Download: 1

AutoAdr: 1

Parameter:

PAAssignment: PLC

Channels:

DI\_PE203\_PIIY\_OK AT %IX16.8: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
DI\_PE211\_PIIY\_OK AT %IX16.9: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
DI\_PE212\_PIIY\_OK AT %IX16.10: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
DI\_SPARE\_12 AT %IX16.11: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
DI\_PE203\_PSL\_HI AT %IX16.12: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
DI\_PE203\_PSL\_MIDHI AT %IX16.13: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
DI\_PE203\_PSL\_MIDLO AT %IX16.14: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
DI\_PE203\_PSL\_LO AT %IX16.15: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 10

Input address: %IB10

Output address: %QB10

Diagnostic address: %MB0

Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:  
    DI\_PE211\_PSL\_HI AT %IX17.0: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_PE211\_PSL\_MIDHI AT %IX17.1: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_PE211\_PSL\_MIDLO AT %IX17.2: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_PE211\_PSL\_LO AT %IX17.3: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_PE212\_PSL\_HI AT %IX17.4: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_PE212\_PSL\_MIDHI AT %IX17.5: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_PE212\_PSL\_MIDLO AT %IX17.6: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_PE212\_PSL\_LO AT %IX17.7: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 11  
Input address: %IB11  
Output address: %QB11  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:

    DI\_V100\_OPEN AT %IX17.8: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_V100\_CLOSED AT %IX17.9: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_V101\_OPEN AT %IX17.10: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_V101\_CLOSED AT %IX17.11: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_V201\_OPEN AT %IX17.12: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_V201\_CLOSED AT %IX17.13: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_V202\_OPEN AT %IX17.14: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_V202\_CLOSED AT %IX17.15: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 12  
Input address: %IB12  
Output address: %QB12  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:

    DI\_V203\_OPEN AT %IX18.0: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_V203\_CLOSED AT %IX18.1: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_V204\_OPEN AT %IX18.2: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_V204\_CLOSED AT %IX18.3: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_TP201\_TURBO\_OK AT %IX18.4: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_TP201\_AT\_SPEED AT %IX18.5: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_RPV211\_OPEN AT %IX18.6: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_RPV211\_CLOSED AT %IX18.7: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 13  
Input address: %IB13  
Output address: %QB13  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:

    DI\_TPV211\_OPEN AT %IX18.8: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_TPV211\_CLOSED AT %IX18.9: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_RPV212\_OPEN AT %IX18.10: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_RPV212\_CLOSED AT %IX18.11: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_TPV212\_OPEN AT %IX18.12: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_TPV212\_CLOSED AT %IX18.13: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_TP211\_AT\_SPEED AT %IX18.14: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_TP211\_TURBO\_OK AT %IX18.15: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 14

Input address: %IB14  
Output address: %QB14  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:  
    DI\_TP212\_AT\_SPEED AT %IX19.0: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_TP212\_TURBO\_OK AT %IX19.1: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_SLOTV211\_OPEN AT %IX19.2: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_SLOTV211\_CLOSED AT %IX19.3: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_LL211\_LID\_CLOSED AT %IX19.4: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_LL211\_ARM\_RETRACTED AT %IX19.5: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_55 AT %IX19.6: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_56 AT %IX19.7: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*0750-0430 8 DI 24 V DC 3.0ms[VAR] (Id.: 2000001008)

Node number: 15  
Input address: %IB15  
Output address: %QB15  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1  
Parameter:  
    PAAssignment: PLC  
Channels:  
    DI\_SPARE\_57 AT %IX19.8: BOOL; (\* Ch\_1 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_58 AT %IX19.9: BOOL; (\* Ch\_2 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_59 AT %IX19.10: BOOL; (\* Ch\_3 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_60 AT %IX19.11: BOOL; (\* Ch\_4 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_61 AT %IX19.12: BOOL; (\* Ch\_5 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_62 AT %IX19.13: BOOL; (\* Ch\_6 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_63 AT %IX19.14: BOOL; (\* Ch\_7 Digital input \*) [CHANNEL (I)]  
    DI\_SPARE\_64 AT %IX19.15: BOOL; (\* Ch\_8 Digital input \*) [CHANNEL (I)]

\*Fieldbus variables[FIX] (Id.: 2010310001)

Node number: 1  
Input address: %IB0  
Output address: %QB0  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1

\*Flag variables[FIX] (Id.: 2010320001)

Node number: 2  
Input address: %IB0  
Output address: %QB0  
Diagnostic address: %MB0  
Download: 1  
AutoAdr: 1

Sampling Trace

No trace loaded

Task configuration

☐ Task configuration  
    ├── System events  
    └── ☐ Main (PRIORITY := 1, INTERVAL := T#15ms  
        ├── PLC\_PRG();  
        └── ☐ IAI (PRIORITY := 3, INTERVAL := T#100ms  
            └── Actuator\_SM();

Watch- and Recipe Manager

Workspace

Parameter Manager

|      |                   |
|------|-------------------|
| 0001 | Parameter-Manager |
| 0002 | =====             |

Cross Reference List

|                  |            |
|------------------|------------|
| xDataReady       |            |
| ACTUATOR_SM (23) | Local Read |

|                   |                            |              |
|-------------------|----------------------------|--------------|
|                   | ACTUATOR_SM (50)           | Local Read   |
|                   | ACTUATOR_SM (59)           | Local Read   |
|                   | ACTUATOR_SM (67)           | Local Read   |
|                   | ACTUATOR_SM (76)           | Local Read   |
|                   | ACTUATOR_SM (85)           | Local Read   |
|                   | ACTUATOR_SM (92)           | Local Read   |
|                   | ACTUATOR_SM (105)          | Local Read   |
|                   | ACTUATOR_SM (122)          | Local Read   |
|                   | ACTUATOR_SM (130)          | Local Read   |
|                   | ACTUATOR_SM.DRG1_W... (34) | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (38) | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (40) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (35) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (39) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (41) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (34) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (41) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (43) | Local Write  |
|                   | ACTUATORinit (11)          | Local Write  |
| xSend             |                            |              |
|                   | ACTUATOR_SM.CONNECT (9)    | Local Write  |
|                   | ACTUATOR_SM.CONNECT (25)   | Local Read   |
|                   | ACTUATOR_SM.DRG1_W... (7)  | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (26) | Local Read   |
|                   | ACTUATOR_SM.DRG1_W... (36) | Local Read   |
|                   | ACTUATOR_SM.PCMD_W... (8)  | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (27) | Local Read   |
|                   | ACTUATOR_SM.PCMD_W... (37) | Local Read   |
|                   | ACTUATOR_SM.STATUS... (7)  | Local Write  |
|                   | ACTUATOR_SM.STATUS... (26) | Local Read   |
|                   | ACTUATOR_SM.STATUS... (36) | Local Read   |
|                   | ACTUATORinit (9)           | Local Write  |
| xConnect          |                            |              |
|                   | ACTUATOR_SM (5)            | Local Write  |
|                   | ACTUATOR_SM (10)           | Local Write  |
|                   | ACTUATOR_SM (145)          | Local Write  |
|                   | ACTUATOR_SM.CONNECT (6)    | Local Read   |
|                   | ACTUATOR_SM.CONNECT (31)   | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (32) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (33) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (32) | Local Write  |
|                   | ACTUATORinit (8)           | Local Write  |
| wActuatorTarget   |                            |              |
|                   | ACTUATOR_SM (107)          | Global Read  |
|                   | ACTUATOR_SM.PCMD_W... (6)  | Global Read  |
|                   | PLC_PRG.ACTUATOR_O... (4)  | Global Write |
|                   | _global_init (1)           | Global Write |
| xBusy             |                            |              |
|                   | ACTUATOR_SM (17)           | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (5)  | Local Read   |
|                   | ACTUATOR_SM.DRG1_W... (6)  | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (33) | Local Write  |
|                   | ACTUATOR_SM.DRG1_W... (37) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (5)  | Local Read   |
|                   | ACTUATOR_SM.PCMD_W... (7)  | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (34) | Local Write  |
|                   | ACTUATOR_SM.PCMD_W... (38) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (5)  | Local Read   |
|                   | ACTUATOR_SM.STATUS... (6)  | Local Write  |
|                   | ACTUATOR_SM.STATUS... (33) | Local Write  |
|                   | ACTUATOR_SM.STATUS... (40) | Local Write  |
|                   | ACTUATORinit (10)          | Local Write  |
| wActuatorStatus   |                            |              |
|                   | ACTUATOR_SM.STATUS... (39) | Global Write |
|                   | PLC_PRG.ACTUATOR_I... (3)  | Global Read  |
|                   | _global_init (2)           | Global Write |
| xActuatorReady    |                            |              |
|                   | ACTUATOR_SM (4)            | Global Write |
|                   | ACTUATOR_SM (110)          | Global Write |
|                   | ACTUATOR_SM (115)          | Global Write |
|                   | PLC_PRG.ACTUATOR_I... (5)  | Global Read  |
|                   | _global_init (1)           | Global Write |
| wActuatorPosition |                            |              |

|                            |              |
|----------------------------|--------------|
| ACTUATOR_SM (107)          | Global Read  |
| ACTUATOR_SM.STATUS... (37) | Global Write |
| PLC_PRG.ACTUATOR_I... (7)  | Global Read  |
| _global_init (3)           | Global Write |
| VPV212_OPN                 |              |
| PLC_PRG.PROCESS_IN... (64) | Local Write  |
| PLC_PRG.PROCESS_IN... (65) | Local Read   |
| _global_init (211)         | Local Write  |
| wTarget                    |              |
| ACTUATOR_SM.PCMD_W... (6)  | Local Write  |
| ACTUATOR_SM.PCMD_W... (27) | Local Read   |
| ACTUATORinit (5)           | Local Write  |
| wActuatorAlarm             |              |
| ACTUATOR_SM.STATUS... (38) | Global Write |
| _global_init (4)           | Global Write |
| VPV211_SLOW_OPN_REQ_ES     |              |
| PLC_PRG.ES_SM (14)         | Local Write  |
| PLC_PRG.ES_SM (28)         | Local Write  |
| PLC_PRG.ES_SM (42)         | Local Write  |
| PLC_PRG.ES_SM (60)         | Local Write  |
| PLC_PRG.ES_SM (78)         | Local Write  |
| PLC_PRG.ES_SM (96)         | Local Write  |
| PLC_PRG.ES_SM (114)        | Local Write  |
| PLC_PRG.ES_SM (133)        | Local Write  |
| PLC_PRG.ES_SM (151)        | Local Write  |
| PLC_PRG.ES_SM (172)        | Local Write  |
| PLC_PRG.ES_SM (192)        | Local Write  |
| PLC_PRG.VALVES (57)        | Local Read   |
| PLC_PRG.VALVES (58)        | Local Read   |
| _global_init (258)         | Local Write  |
| V100_OPN                   |              |
| PLC_PRG.BYPASSES (8)       | Local Write  |
| PLC_PRG.PROCESS_IN... (30) | Local Write  |
| PLC_PRG.SC_OUTPUTS (37)    | Local Read   |
| _global_init (191)         | Local Write  |
| wState                     |              |
| ACTUATOR_SM (3)            | Local Read   |
| ACTUATOR_SM (7)            | Local Write  |
| ACTUATOR_SM (9)            | Local Read   |
| ACTUATOR_SM (12)           | Local Write  |
| ACTUATOR_SM (14)           | Local Read   |
| ACTUATOR_SM (18)           | Local Write  |
| ACTUATOR_SM (21)           | Local Read   |
| ACTUATOR_SM (27)           | Local Write  |
| ACTUATOR_SM (31)           | Local Write  |
| ACTUATOR_SM (35)           | Local Write  |
| ACTUATOR_SM (39)           | Local Write  |
| ACTUATOR_SM (42)           | Local Write  |
| ACTUATOR_SM (46)           | Local Read   |
| ACTUATOR_SM (52)           | Local Write  |
| ACTUATOR_SM (55)           | Local Read   |
| ACTUATOR_SM (61)           | Local Write  |
| ACTUATOR_SM (64)           | Local Read   |
| ACTUATOR_SM (69)           | Local Write  |
| ACTUATOR_SM (72)           | Local Read   |
| ACTUATOR_SM (78)           | Local Write  |
| ACTUATOR_SM (81)           | Local Read   |
| ACTUATOR_SM (87)           | Local Write  |
| ACTUATOR_SM (90)           | Local Read   |
| ACTUATOR_SM (96)           | Local Write  |
| ACTUATOR_SM (99)           | Local Write  |
| ACTUATOR_SM (103)          | Local Read   |
| ACTUATOR_SM (111)          | Local Write  |
| ACTUATOR_SM (116)          | Local Write  |
| ACTUATOR_SM (120)          | Local Read   |
| ACTUATOR_SM (125)          | Local Write  |
| ACTUATOR_SM (128)          | Local Read   |
| ACTUATOR_SM (136)          | Local Write  |
| ACTUATOR_SM (140)          | Local Write  |
| ACTUATOR_SM (146)          | Local Write  |
| ACTUATOR_SM.CONNECT (32)   | Local Write  |
| ACTUATOR_SM.DRG1_W... (35) | Local Write  |
| ACTUATOR_SM.PCMD_W... (36) | Local Write  |

|                            |             |
|----------------------------|-------------|
| ACTUATOR_SM.STATUS... (35) | Local Write |
| ACTUATORinit (12)          | Local Write |
| VPV212_SLOW_OPN_REQ_LL     |             |
| PLC_PRG.LL_SM (14)         | Local Write |
| PLC_PRG.LL_SM (27)         | Local Write |
| PLC_PRG.LL_SM (40)         | Local Write |
| PLC_PRG.LL_SM (57)         | Local Write |
| PLC_PRG.LL_SM (74)         | Local Write |
| PLC_PRG.LL_SM (91)         | Local Write |
| PLC_PRG.LL_SM (108)        | Local Write |
| PLC_PRG.LL_SM (126)        | Local Write |
| PLC_PRG.LL_SM (143)        | Local Write |
| PLC_PRG.LL_SM (163)        | Local Write |
| PLC_PRG.LL_SM (182)        | Local Write |
| PLC_PRG.VALVES (89)        | Local Read  |
| PLC_PRG.VALVES (90)        | Local Read  |
| _global_init (270)         | Local Write |
| VPV212_SLOW_CLS_REQ_LL     |             |
| _global_init (271)         | Local Write |
| VPV212_SLOW                |             |
| PLC_PRG.PROCESS_OU... (24) | Local Read  |
| PLC_PRG.SC_OUTPUTS (99)    | Local Read  |
| PLC_PRG.VALVES (86)        | Local Write |
| PLC_PRG.VALVES (87)        | Local Write |
| PLC_PRG.VALVES (88)        | Local Write |
| PLC_PRG.VALVES (89)        | Local Write |
| PLC_PRG.VALVES (90)        | Local Write |
| PLC_PRG.VALVES (91)        | Local Read  |
| _global_init (304)         | Local Read  |
| VPV211_SLOW_CLS_REQ_ES     |             |
| _global_init (259)         | Local Write |
| SC_VERSION_MAJOR%MW1280    |             |
| PLC_PRG.SC_OUTPUTS (156)   | Local Write |
| _global_init (147)         | Local Write |
| SC_VENT212_SLOW_CMD%MX8.11 |             |
| PLC_PRG.SC_OUTPUTS (99)    | Local Write |
| _global_init (90)          | Local Write |
| uiSuccessful               |             |
| ACTUATOR_SM (134)          | Local Read  |
| ACTUATOR_SM (134)          | Local Write |
| _global_init (7)           | Local Write |
| SC_VENT211_SLOW_CMD%MX6.11 |             |
| PLC_PRG.SC_OUTPUTS (80)    | Local Write |
| _global_init (75)          | Local Write |
| SC_V203_OPN_REQ%MX641.6    |             |
| PLC_PRG.CLEAR_REQS (11)    | Local Write |
| PLC_PRG.SC_INPUTS (11)     | Local Read  |
| _global_init (137)         | Local Write |
| tTCP_Watchdog              |             |
| ACTUATOR_SM.CONNECT (25)   | Local Read  |
| ACTUATOR_SM.DRG1_W... (26) | Local Read  |
| ACTUATOR_SM.PCMD_W... (27) | Local Read  |
| ACTUATOR_SM.STATUS... (26) | Local Read  |
| _global_init (5)           | Local Write |
| SC_V203_OPEN_CMD%MX5.5     |             |
| PLC_PRG.SC_OUTPUTS (65)    | Local Write |
| _global_init (63)          | Local Write |
| wPort                      |             |
| ACTUATOR_SM.CONNECT (25)   | Local Read  |
| ACTUATOR_SM.DRG1_W... (26) | Local Read  |
| ACTUATOR_SM.PCMD_W... (27) | Local Read  |
| ACTUATOR_SM.STATUS... (26) | Local Read  |
| _global_init (2)           | Local Write |
| VPV212_FAST_CLS_REQ_LL     |             |
| _global_init (273)         | Local Write |
| VPV212_FAST                |             |
| PLC_PRG.PROCESS_OU... (25) | Local Read  |
| PLC_PRG.SC_OUTPUTS (100)   | Local Read  |
| PLC_PRG.VALVES (94)        | Local Write |
| PLC_PRG.VALVES (95)        | Local Write |
| PLC_PRG.VALVES (96)        | Local Write |
| PLC_PRG.VALVES (97)        | Local Write |
| PLC_PRG.VALVES (98)        | Local Write |

|                            |             |
|----------------------------|-------------|
| PLC_PRG.VALVES (99)        | Local Read  |
| _global_init (305)         | Local Read  |
| VPV212_FAST_OPN_REQ_LL     |             |
| PLC_PRG.LL_SM (15)         | Local Write |
| PLC_PRG.LL_SM (28)         | Local Write |
| PLC_PRG.LL_SM (41)         | Local Write |
| PLC_PRG.LL_SM (58)         | Local Write |
| PLC_PRG.LL_SM (75)         | Local Write |
| PLC_PRG.LL_SM (92)         | Local Write |
| PLC_PRG.LL_SM (109)        | Local Write |
| PLC_PRG.LL_SM (127)        | Local Write |
| PLC_PRG.LL_SM (144)        | Local Write |
| PLC_PRG.LL_SM (164)        | Local Write |
| PLC_PRG.LL_SM (183)        | Local Write |
| PLC_PRG.VALVES (97)        | Local Read  |
| PLC_PRG.VALVES (98)        | Local Read  |
| _global_init (272)         | Local Write |
| VPV212_CSD                 |             |
| PLC_PRG.PROCESS_IN... (65) | Local Write |
| PLC_PRG.VALVES (102)       | Local Read  |
| _global_init (212)         | Local Write |
| VPV211_SLOW                |             |
| PLC_PRG.PROCESS_OU... (15) | Local Read  |
| PLC_PRG.SC_OUTPUTS (80)    | Local Read  |
| PLC_PRG.VALVES (54)        | Local Write |
| PLC_PRG.VALVES (55)        | Local Write |
| PLC_PRG.VALVES (56)        | Local Write |
| PLC_PRG.VALVES (57)        | Local Write |
| PLC_PRG.VALVES (58)        | Local Write |
| PLC_PRG.VALVES (59)        | Local Read  |
| _global_init (299)         | Local Read  |
| VPV211_CSD                 |             |
| PLC_PRG.PROCESS_IN... (53) | Local Write |
| PLC_PRG.VALVES (70)        | Local Read  |
| _global_init (204)         | Local Write |
| VPV211_OPN                 |             |
| PLC_PRG.PROCESS_IN... (52) | Local Write |
| PLC_PRG.PROCESS_IN... (53) | Local Read  |
| _global_init (203)         | Local Write |
| VPV211_FAST_CLS_REQ_ES     |             |
| _global_init (261)         | Local Write |
| VPV211_FAST                |             |
| PLC_PRG.PROCESS_OU... (16) | Local Read  |
| PLC_PRG.SC_OUTPUTS (81)    | Local Read  |
| PLC_PRG.VALVES (62)        | Local Write |
| PLC_PRG.VALVES (63)        | Local Write |
| PLC_PRG.VALVES (64)        | Local Write |
| PLC_PRG.VALVES (65)        | Local Write |
| PLC_PRG.VALVES (66)        | Local Write |
| PLC_PRG.VALVES (67)        | Local Read  |
| _global_init (300)         | Local Read  |
| VPV211_FAST_OPN_REQ_ES     |             |
| PLC_PRG.ES_SM (15)         | Local Write |
| PLC_PRG.ES_SM (29)         | Local Write |
| PLC_PRG.ES_SM (43)         | Local Write |
| PLC_PRG.ES_SM (61)         | Local Write |
| PLC_PRG.ES_SM (79)         | Local Write |
| PLC_PRG.ES_SM (97)         | Local Write |
| PLC_PRG.ES_SM (115)        | Local Write |
| PLC_PRG.ES_SM (134)        | Local Write |
| PLC_PRG.ES_SM (152)        | Local Write |
| PLC_PRG.ES_SM (173)        | Local Write |
| PLC_PRG.ES_SM (193)        | Local Write |
| PLC_PRG.VALVES (65)        | Local Read  |
| PLC_PRG.VALVES (66)        | Local Read  |
| _global_init (260)         | Local Write |
| VPV201                     |             |
| PLC_PRG.PROCESS_OU... (10) | Local Read  |
| PLC_PRG.SC_OUTPUTS (112)   | Local Read  |
| PLC_PRG.SC_OUTPUTS (113)   | Local Read  |
| PLC_PRG.VALVES (28)        | Local Write |
| PLC_PRG.VALVES (29)        | Local Write |
| PLC_PRG.VALVES (30)        | Local Write |

|                            |             |
|----------------------------|-------------|
| PLC_PRG.VALVES (31)        | Local Write |
| PLC_PRG.VALVES (32)        | Local Write |
| PLC_PRG.VALVES (33)        | Local Read  |
| _global_init (298)         | Local Read  |
| V204_OPN_REQ_SC            |             |
| PLC_PRG.SC_INPUTS (13)     | Local Write |
| PLC_PRG.VALVES (39)        | Local Read  |
| _global_init (255)         | Local Write |
| V204_CSD                   |             |
| PLC_PRG.ES_SM (33)         | Local Read  |
| PLC_PRG.PROCESS_IN... (46) | Local Write |
| PLC_PRG.PUMPS (16)         | Local Read  |
| PLC_PRG.SC_OUTPUTS (68)    | Local Read  |
| PLC_PRG.SC_OUTPUTS (70)    | Local Read  |
| PLC_PRG.VALVES (28)        | Local Read  |
| PLC_PRG.VALVES (46)        | Local Read  |
| PLC_PRG.VALVES (54)        | Local Read  |
| PLC_PRG.VALVES (62)        | Local Read  |
| PLC_PRG.VALVES (70)        | Local Read  |
| PLC_PRG.VALVES (80)        | Local Read  |
| _global_init (202)         | Local Write |
| V203_OPN_REQ_SC            |             |
| PLC_PRG.SC_INPUTS (11)     | Local Write |
| PLC_PRG.VALVES (23)        | Local Read  |
| _global_init (253)         | Local Write |
| V204_OPN                   |             |
| PLC_PRG.PROCESS_IN... (45) | Local Write |
| PLC_PRG.SC_OUTPUTS (69)    | Local Read  |
| _global_init (201)         | Local Write |
| V204_CLS_REQ_ES            |             |
| PLC_PRG.ES_SM (10)         | Local Write |
| PLC_PRG.ES_SM (24)         | Local Write |
| PLC_PRG.ES_SM (38)         | Local Write |
| PLC_PRG.ES_SM (56)         | Local Write |
| PLC_PRG.ES_SM (74)         | Local Write |
| PLC_PRG.ES_SM (92)         | Local Write |
| PLC_PRG.ES_SM (110)        | Local Write |
| PLC_PRG.ES_SM (129)        | Local Write |
| PLC_PRG.ES_SM (147)        | Local Write |
| PLC_PRG.ES_SM (168)        | Local Write |
| PLC_PRG.ES_SM (188)        | Local Write |
| PLC_PRG.VALVES (40)        | Local Read  |
| _global_init (257)         | Local Write |
| V204                       |             |
| PLC_PRG.PROCESS_OU... (8)  | Local Read  |
| PLC_PRG.SC_OUTPUTS (71)    | Local Read  |
| PLC_PRG.SC_OUTPUTS (72)    | Local Read  |
| PLC_PRG.SC_OUTPUTS (73)    | Local Read  |
| PLC_PRG.SC_OUTPUTS (74)    | Local Read  |
| PLC_PRG.VALVES (36)        | Local Write |
| PLC_PRG.VALVES (37)        | Local Write |
| PLC_PRG.VALVES (38)        | Local Write |
| PLC_PRG.VALVES (39)        | Local Write |
| PLC_PRG.VALVES (40)        | Local Write |
| PLC_PRG.VALVES (41)        | Local Read  |
| _global_init (297)         | Local Read  |
| V204_CLS_REQ_SC            |             |
| PLC_PRG.SC_INPUTS (14)     | Local Write |
| PLC_PRG.VALVES (40)        | Local Read  |
| _global_init (256)         | Local Write |
| V203_CSD                   |             |
| PLC_PRG.BYPASSES (21)      | Local Write |
| PLC_PRG.PROCESS_IN... (43) | Local Write |
| PLC_PRG.PUMPS (16)         | Local Read  |
| PLC_PRG.SC_OUTPUTS (60)    | Local Read  |
| PLC_PRG.SC_OUTPUTS (62)    | Local Read  |
| PLC_PRG.VALVES (28)        | Local Read  |
| _global_init (200)         | Local Write |
| V203_OPN                   |             |
| PLC_PRG.BYPASSES (20)      | Local Write |
| PLC_PRG.PROCESS_IN... (42) | Local Write |
| PLC_PRG.SC_OUTPUTS (61)    | Local Read  |
| _global_init (199)         | Local Write |



|                       |       |             |
|-----------------------|-------|-------------|
| V203                  |       |             |
| PLC_PRG.PROCESS_OU... | (7)   | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (63)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (64)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (65)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (66)  | Local Read  |
| PLC_PRG.VALVES        | (20)  | Local Write |
| PLC_PRG.VALVES        | (21)  | Local Write |
| PLC_PRG.VALVES        | (22)  | Local Write |
| PLC_PRG.VALVES        | (23)  | Local Write |
| PLC_PRG.VALVES        | (24)  | Local Write |
| PLC_PRG.VALVES        | (25)  | Local Read  |
| _global_init          | (296) | Local Read  |
| V203_CLS_REQ_SC       |       |             |
| PLC_PRG.SC_INPUTS     | (12)  | Local Write |
| PLC_PRG.VALVES        | (24)  | Local Read  |
| _global_init          | (254) | Local Write |
| V202_OPN              |       |             |
| PLC_PRG.BYPASSES      | (17)  | Local Write |
| PLC_PRG.FAULT_LOGIC   | (6)   | Local Read  |
| PLC_PRG.FAULT_LOGIC   | (37)  | Local Read  |
| PLC_PRG.PROCESS_IN... | (39)  | Local Write |
| PLC_PRG.SC_OUTPUTS    | (56)  | Local Read  |
| _global_init          | (197) | Local Write |
| V202_CSD              |       |             |
| PLC_PRG.BYPASSES      | (18)  | Local Write |
| PLC_PRG.PROCESS_IN... | (40)  | Local Write |
| PLC_PRG.SC_OUTPUTS    | (57)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (58)  | Local Read  |
| _global_init          | (198) | Local Write |
| V201_OPN_REQ_SC       |       |             |
| PLC_PRG.SC_INPUTS     | (9)   | Local Write |
| PLC_PRG.VALVES        | (15)  | Local Read  |
| _global_init          | (251) | Local Write |
| V201_OPN              |       |             |
| PLC_PRG.BYPASSES      | (14)  | Local Write |
| PLC_PRG.PROCESS_IN... | (36)  | Local Write |
| PLC_PRG.SC_OUTPUTS    | (49)  | Local Read  |
| _global_init          | (195) | Local Write |
| V201_CLS_REQ_SC       |       |             |
| PLC_PRG.SC_INPUTS     | (10)  | Local Write |
| PLC_PRG.VALVES        | (16)  | Local Read  |
| _global_init          | (252) | Local Write |
| V201                  |       |             |
| PLC_PRG.PROCESS_OU... | (6)   | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (51)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (52)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (53)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (54)  | Local Read  |
| PLC_PRG.VALVES        | (12)  | Local Write |
| PLC_PRG.VALVES        | (13)  | Local Write |
| PLC_PRG.VALVES        | (14)  | Local Write |
| PLC_PRG.VALVES        | (15)  | Local Write |
| PLC_PRG.VALVES        | (16)  | Local Write |
| PLC_PRG.VALVES        | (17)  | Local Read  |
| _global_init          | (295) | Local Read  |
| V201_CSD              |       |             |
| PLC_PRG.BYPASSES      | (15)  | Local Write |
| PLC_PRG.PROCESS_IN... | (37)  | Local Write |
| PLC_PRG.SC_OUTPUTS    | (48)  | Local Read  |
| PLC_PRG.SC_OUTPUTS    | (50)  | Local Read  |
| _global_init          | (196) | Local Write |
| V101_OPN_REQ_SC       |       |             |
| PLC_PRG.SC_INPUTS     | (7)   | Local Write |
| PLC_PRG.VALVES        | (7)   | Local Read  |
| _global_init          | (249) | Local Write |
| V101_OPN              |       |             |
| PLC_PRG.BYPASSES      | (11)  | Local Write |
| PLC_PRG.PROCESS_IN... | (33)  | Local Write |
| PLC_PRG.SC_OUTPUTS    | (41)  | Local Read  |
| _global_init          | (193) | Local Write |
| V101_CSD              |       |             |
| PLC_PRG.BYPASSES      | (12)  | Local Write |

|                   |                            |             |
|-------------------|----------------------------|-------------|
| V101              | PLC_PRG.PROCESS_IN... (34) | Local Write |
|                   | PLC_PRG.SC_OUTPUTS (40)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (42)    | Local Read  |
|                   | _global_init (194)         | Local Write |
| V101              | PLC_PRG.PROCESS_OU... (5)  | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (43)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (44)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (45)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (46)    | Local Read  |
|                   | PLC_PRG.VALVES (4)         | Local Write |
|                   | PLC_PRG.VALVES (5)         | Local Write |
|                   | PLC_PRG.VALVES (6)         | Local Write |
|                   | PLC_PRG.VALVES (7)         | Local Write |
|                   | PLC_PRG.VALVES (8)         | Local Write |
|                   | PLC_PRG.VALVES (9)         | Local Read  |
|                   | _global_init (294)         | Local Read  |
| V101_CLS_REQ_SC   |                            |             |
| V101              | PLC_PRG.SC_INPUTS (8)      | Local Write |
|                   | PLC_PRG.VALVES (8)         | Local Read  |
|                   | _global_init (250)         | Local Write |
| V100_CSD          |                            |             |
| V100              | PLC_PRG.BYPASSES (9)       | Local Write |
|                   | PLC_PRG.PROCESS_IN... (31) | Local Write |
|                   | PLC_PRG.SC_OUTPUTS (38)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (40)    | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (48)    | Local Read  |
|                   | _global_init (192)         | Local Write |
| TPV212_OPN_REQ_LL |                            |             |
| TPV212            | PLC_PRG.LL_SM (16)         | Local Write |
|                   | PLC_PRG.LL_SM (29)         | Local Write |
|                   | PLC_PRG.LL_SM (42)         | Local Write |
|                   | PLC_PRG.LL_SM (59)         | Local Write |
|                   | PLC_PRG.LL_SM (76)         | Local Write |
|                   | PLC_PRG.LL_SM (93)         | Local Write |
|                   | PLC_PRG.LL_SM (110)        | Local Write |
|                   | PLC_PRG.LL_SM (128)        | Local Write |
|                   | PLC_PRG.LL_SM (145)        | Local Write |
|                   | PLC_PRG.LL_SM (165)        | Local Write |
|                   | PLC_PRG.LL_SM (184)        | Local Write |
|                   | PLC_PRG.VALVES (113)       | Local Read  |
|                   | PLC_PRG.VALVES (114)       | Local Read  |
|                   | _global_init (276)         | Local Write |
| TPV212_OPN        |                            |             |
| TPV212            | PLC_PRG.PROCESS_IN... (70) | Local Write |
|                   | PLC_PRG.SC_OUTPUTS (102)   | Local Read  |
|                   | _global_init (215)         | Local Write |
| TPV212_CSD        |                            |             |
| TPV212            | PLC_PRG.PROCESS_IN... (71) | Local Write |
|                   | PLC_PRG.PUMPS (31)         | Local Read  |
|                   | PLC_PRG.PUMPS (32)         | Local Read  |
|                   | PLC_PRG.SC_OUTPUTS (103)   | Local Read  |
|                   | PLC_PRG.VALVES (86)        | Local Read  |
|                   | PLC_PRG.VALVES (94)        | Local Read  |
|                   | _global_init (216)         | Local Write |
| TPV212_CLS_REQ_LL |                            |             |
| TPV212            | _global_init (277)         | Local Write |
| TPV211_OPN_REQ_ES |                            |             |
| TPV211            | PLC_PRG.ES_SM (16)         | Local Write |
|                   | PLC_PRG.ES_SM (30)         | Local Write |
|                   | PLC_PRG.ES_SM (44)         | Local Write |
|                   | PLC_PRG.ES_SM (62)         | Local Write |
|                   | PLC_PRG.ES_SM (80)         | Local Write |
|                   | PLC_PRG.ES_SM (98)         | Local Write |
|                   | PLC_PRG.ES_SM (116)        | Local Write |
|                   | PLC_PRG.ES_SM (135)        | Local Write |
|                   | PLC_PRG.ES_SM (153)        | Local Write |
|                   | PLC_PRG.ES_SM (174)        | Local Write |
|                   | PLC_PRG.ES_SM (194)        | Local Write |
|                   | PLC_PRG.VALVES (81)        | Local Read  |
|                   | PLC_PRG.VALVES (82)        | Local Read  |
|                   | _global_init (264)         | Local Write |
| TP212_OFF_REQ_LL  |                            |             |

|                            |             |
|----------------------------|-------------|
| _global_init (287)         | Local Write |
| TP212_READY                |             |
| PLC_PRG.PROCESS_IN... (74) | Local Write |
| PLC_PRG.SC_OUTPUTS (128)   | Local Read  |
| _global_init (223)         | Local Write |
| TP201_VENT_ENABLE_REQ_SC   |             |
| PLC_PRG.SC_INPUTS (17)     | Local Write |
| PLC_PRG.VALVES (31)        | Local Read  |
| _global_init (280)         | Local Write |
| TP201_ON_REQ_SC            |             |
| PLC_PRG.PUMPS (17)         | Local Read  |
| PLC_PRG.SC_INPUTS (15)     | Local Write |
| _global_init (278)         | Local Write |
| TPV211_CSD                 |             |
| PLC_PRG.PROCESS_IN... (59) | Local Write |
| PLC_PRG.PUMPS (23)         | Local Read  |
| PLC_PRG.PUMPS (24)         | Local Read  |
| PLC_PRG.SC_OUTPUTS (84)    | Local Read  |
| PLC_PRG.VALVES (54)        | Local Read  |
| PLC_PRG.VALVES (62)        | Local Read  |
| _global_init (208)         | Local Write |
| TP201_OK                   |             |
| PLC_PRG.FAULT_LOGIC (19)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (48) | Local Write |
| PLC_PRG.PROCESS_IN... (49) | Local Read  |
| PLC_PRG.SC_OUTPUTS (115)   | Local Read  |
| _global_init (217)         | Local Write |
| TPV211_OPN                 |             |
| PLC_PRG.PROCESS_IN... (58) | Local Write |
| PLC_PRG.SC_OUTPUTS (83)    | Local Read  |
| _global_init (207)         | Local Write |
| TPV211_CLS_REQ_ES          |             |
| _global_init (265)         | Local Write |
| TP212_ON_REQ_LL            |             |
| PLC_PRG.LL_SM (17)         | Local Write |
| PLC_PRG.LL_SM (30)         | Local Write |
| PLC_PRG.LL_SM (43)         | Local Write |
| PLC_PRG.LL_SM (60)         | Local Write |
| PLC_PRG.LL_SM (77)         | Local Write |
| PLC_PRG.LL_SM (94)         | Local Write |
| PLC_PRG.LL_SM (111)        | Local Write |
| PLC_PRG.LL_SM (129)        | Local Write |
| PLC_PRG.LL_SM (146)        | Local Write |
| PLC_PRG.LL_SM (166)        | Local Write |
| PLC_PRG.LL_SM (185)        | Local Write |
| PLC_PRG.PUMPS (33)         | Local Read  |
| _global_init (286)         | Local Write |
| TP211_ON_REQ_ES            |             |
| PLC_PRG.ES_SM (17)         | Local Write |
| PLC_PRG.ES_SM (31)         | Local Write |
| PLC_PRG.ES_SM (45)         | Local Write |
| PLC_PRG.ES_SM (63)         | Local Write |
| PLC_PRG.ES_SM (81)         | Local Write |
| PLC_PRG.ES_SM (99)         | Local Write |
| PLC_PRG.ES_SM (117)        | Local Write |
| PLC_PRG.ES_SM (136)        | Local Write |
| PLC_PRG.ES_SM (154)        | Local Write |
| PLC_PRG.ES_SM (175)        | Local Write |
| PLC_PRG.ES_SM (195)        | Local Write |
| PLC_PRG.PUMPS (25)         | Local Read  |
| _global_init (284)         | Local Write |
| TP211_OFF_REQ_ES           |             |
| _global_init (285)         | Local Write |
| TP201_VENT_DISABLE_REQ_SC  |             |
| PLC_PRG.SC_INPUTS (18)     | Local Write |
| PLC_PRG.VALVES (32)        | Local Read  |
| _global_init (281)         | Local Write |
| TP201_ON                   |             |
| PLC_PRG.PROCESS_IN... (49) | Local Write |
| PLC_PRG.PROCESS_IN... (50) | Local Read  |
| PLC_PRG.SC_OUTPUTS (116)   | Local Read  |
| PLC_PRG.VALVES (28)        | Local Read  |

|                            |              |
|----------------------------|--------------|
| _global_init (218)         | Local Write  |
| SOCKET_SOL                 |              |
| _global_init (116)         | Global Write |
| SOCKET_SO_TYPE             |              |
| _global_init (134)         | Global Write |
| SOCKET_SO_USELOOPBACK      |              |
| _global_init (123)         | Global Write |
| SOCKET_SO_SNDTIMEO         |              |
| _global_init (131)         | Global Write |
| SOCKET_SO_ACCEPTCONN       |              |
| _global_init (118)         | Global Write |
| TP201_OFF_REQ_SC           |              |
| PLC_PRG.PUMPS (18)         | Local Read   |
| PLC_PRG.SC_INPUTS (16)     | Local Write  |
| _global_init (279)         | Local Write  |
| SC_VERSION_MAJOR%MW1280    |              |
| PLC_PRG.SC_OUTPUTS (156)   | Local Write  |
| _global_init (147)         | Local Write  |
| SOCKET_SO_REUSEPORT        |              |
| _global_init (126)         | Global Write |
| SC_VENT212_FAST_CMD%MX8.12 |              |
| PLC_PRG.SC_OUTPUTS (100)   | Local Write  |
| _global_init (91)          | Local Write  |
| SC_V202_OPEN%MX4.8         |              |
| PLC_PRG.SC_OUTPUTS (56)    | Local Write  |
| _global_init (55)          | Local Write  |
| SC_V201_BEAM_PASS%MX4.0    |              |
| PLC_PRG.SC_OUTPUTS (48)    | Local Write  |
| PLC_PRG.SC_OUTPUTS (58)    | Local Read   |
| _global_init (48)          | Local Write  |
| SC_V100_OPEN%MX3.0         |              |
| PLC_PRG.SC_OUTPUTS (37)    | Local Write  |
| _global_init (39)          | Local Write  |
| uiFailing                  |              |
| ACTUATOR_SM.CONNECT (30)   | Local Read   |
| ACTUATOR_SM.CONNECT (30)   | Local Write  |
| ACTUATOR_SM.DRG1_W... (31) | Local Read   |
| ACTUATOR_SM.DRG1_W... (31) | Local Write  |
| ACTUATOR_SM.PCMD_W... (32) | Local Read   |
| ACTUATOR_SM.PCMD_W... (32) | Local Write  |
| ACTUATOR_SM.STATUS... (31) | Local Read   |
| ACTUATOR_SM.STATUS... (31) | Local Write  |
| _global_init (8)           | Local Write  |
| TP212_OK                   |              |
| PLC_PRG.FAULT_LOGIC (21)   | Local Read   |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.LL_SM (47)         | Local Read   |
| PLC_PRG.LL_SM (154)        | Local Read   |
| PLC_PRG.PROCESS_IN... (73) | Local Write  |
| PLC_PRG.SC_OUTPUTS (127)   | Local Read   |
| _global_init (222)         | Local Write  |
| TP211_READY                |              |
| PLC_PRG.PROCESS_IN... (62) | Local Write  |
| PLC_PRG.SC_OUTPUTS (124)   | Local Read   |
| _global_init (221)         | Local Write  |
| TP211_OK                   |              |
| PLC_PRG.ES_SM (49)         | Local Read   |
| PLC_PRG.ES_SM (162)        | Local Read   |
| PLC_PRG.FAULT_LOGIC (20)   | Local Read   |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.PROCESS_IN... (61) | Local Write  |
| PLC_PRG.SC_OUTPUTS (123)   | Local Read   |
| _global_init (220)         | Local Write  |
| TP201_READY                |              |
| PLC_PRG.PROCESS_IN... (50) | Local Write  |
| PLC_PRG.VALVES (21)        | Local Read   |
| PLC_PRG.VALVES (37)        | Local Read   |
| _global_init (219)         | Local Write  |
| SC_VENT211_FAST_CMD%MX6.12 |              |
| PLC_PRG.SC_OUTPUTS (81)    | Local Write  |
| _global_init (76)          | Local Write  |
| SC_V201_OPN_REQ%MX641.2    |              |
| PLC_PRG.CLEAR_REQS (8)     | Local Write  |

|                            |              |
|----------------------------|--------------|
| PLC_PRG.SC_INPUTS (9)      | Local Read   |
| _global_init (135)         | Local Write  |
| SC_V101_CLOSED%MX3.10      |              |
| PLC_PRG.SC_OUTPUTS (42)    | Local Write  |
| _global_init (43)          | Local Write  |
| SC_PE211_PSL_LO%MX1.12     |              |
| PLC_PRG.SC_OUTPUTS (26)    | Local Write  |
| _global_init (31)          | Local Write  |
| tTCP_Timeout               |              |
| ACTUATOR_SM.CONNECT (25)   | Local Read   |
| ACTUATOR_SM.DRG1_W... (26) | Local Read   |
| ACTUATOR_SM.PCMD_W... (27) | Local Read   |
| ACTUATOR_SM.STATUS... (26) | Local Read   |
| _global_init (4)           | Local Write  |
| TPV212                     |              |
| PLC_PRG.PROCESS_OU... (22) | Local Read   |
| PLC_PRG.SC_OUTPUTS (104)   | Local Read   |
| PLC_PRG.VALVES (110)       | Local Write  |
| PLC_PRG.VALVES (111)       | Local Write  |
| PLC_PRG.VALVES (112)       | Local Write  |
| PLC_PRG.VALVES (113)       | Local Write  |
| PLC_PRG.VALVES (114)       | Local Write  |
| PLC_PRG.VALVES (115)       | Local Read   |
| _global_init (307)         | Local Read   |
| TP211                      |              |
| PLC_PRG.PROCESS_OU... (12) | Local Read   |
| PLC_PRG.PUMPS (22)         | Local Write  |
| PLC_PRG.PUMPS (23)         | Local Write  |
| PLC_PRG.PUMPS (24)         | Local Write  |
| PLC_PRG.PUMPS (25)         | Local Write  |
| PLC_PRG.PUMPS (26)         | Local Read   |
| PLC_PRG.PUMPS (26)         | Local Write  |
| PLC_PRG.PUMPS (27)         | Local Read   |
| PLC_PRG.SC_OUTPUTS (125)   | Local Read   |
| PLC_PRG.VALVES (78)        | Local Read   |
| _global_init (311)         | Local Read   |
| TPV211                     |              |
| PLC_PRG.PROCESS_OU... (13) | Local Read   |
| PLC_PRG.SC_OUTPUTS (85)    | Local Read   |
| PLC_PRG.VALVES (78)        | Local Write  |
| PLC_PRG.VALVES (79)        | Local Write  |
| PLC_PRG.VALVES (80)        | Local Write  |
| PLC_PRG.VALVES (81)        | Local Write  |
| PLC_PRG.VALVES (82)        | Local Write  |
| PLC_PRG.VALVES (83)        | Local Read   |
| _global_init (302)         | Local Read   |
| TP212                      |              |
| PLC_PRG.PROCESS_OU... (21) | Local Read   |
| PLC_PRG.PUMPS (30)         | Local Write  |
| PLC_PRG.PUMPS (31)         | Local Write  |
| PLC_PRG.PUMPS (32)         | Local Write  |
| PLC_PRG.PUMPS (33)         | Local Write  |
| PLC_PRG.PUMPS (34)         | Local Read   |
| PLC_PRG.PUMPS (34)         | Local Write  |
| PLC_PRG.PUMPS (35)         | Local Read   |
| PLC_PRG.SC_OUTPUTS (129)   | Local Read   |
| PLC_PRG.VALVES (110)       | Local Read   |
| _global_init (312)         | Local Read   |
| SOCKET_SO_DEBUG            |              |
| _global_init (117)         | Global Write |
| SOCKET_INVALID             |              |
| _global_init (84)          | Global Write |
| SOCKET_AF_SNA              |              |
| _global_init (98)          | Global Write |
| TP201                      |              |
| PLC_PRG.PROCESS_OU... (9)  | Local Read   |
| PLC_PRG.PUMPS (14)         | Local Write  |
| PLC_PRG.PUMPS (15)         | Local Write  |
| PLC_PRG.PUMPS (16)         | Local Write  |
| PLC_PRG.PUMPS (17)         | Local Write  |
| PLC_PRG.PUMPS (18)         | Local Write  |
| PLC_PRG.PUMPS (19)         | Local Read   |
| PLC_PRG.SC_OUTPUTS (117)   | Local Read   |

|                            |              |
|----------------------------|--------------|
| PLC_PRG.SC_OUTPUTS (118)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (119)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (120)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (121)   | Local Read   |
| PLC_PRG.VALVES (29)        | Local Read   |
| _global_init (308)         | Local Read   |
| SOCKET_TCP_NODELAY         |              |
| CLIENT_OPENCLOSE (20)      | Global Read  |
| CLIENT_OPENCLOSE (71)      | Global Read  |
| _global_init (136)         | Global Write |
| SOCKET_SO_REUSEADDR        |              |
| _global_init (119)         | Global Write |
| SOCKET_SO_OOBINLINE        |              |
| _global_init (125)         | Global Write |
| SOCKET_SO_LINGER           |              |
| _global_init (124)         | Global Write |
| SOCKET_SO_DONTROUTE        |              |
| _global_init (121)         | Global Write |
| SOCKET_SO_BROADCAST        |              |
| _global_init (122)         | Global Write |
| SOCKET_SO_KEEPAVIVE        |              |
| _global_init (120)         | Global Write |
| SOCKET_pseudo_AF_XTP       |              |
| _global_init (106)         | Global Write |
| SOCKET_pseudo_AF_RTIP      |              |
| _global_init (109)         | Global Write |
| SOCKET_pseudo_AF_PIP       |              |
| _global_init (112)         | Global Write |
| SOCKET_AF_SIP              |              |
| _global_init (111)         | Global Write |
| SOCKET_AF_ROUTE            |              |
| _global_init (104)         | Global Write |
| SOCKET_AF_PUP              |              |
| _global_init (90)          | Global Write |
| SOCKET_AF_OSI              |              |
| _global_init (94)          | Global Write |
| SC_VERSION_MINOR%MW1281    |              |
| PLC_PRG.SC_OUTPUTS (157)   | Local Write  |
| _global_init (148)         | Local Write  |
| SC_V204_OPN_REQ%MX641.8    |              |
| PLC_PRG.CLEAR_REQS (14)    | Local Write  |
| PLC_PRG.SC_INPUTS (13)     | Local Read   |
| _global_init (139)         | Local Write  |
| SC_V203_OPEN%MX5.1         |              |
| PLC_PRG.SC_OUTPUTS (61)    | Local Write  |
| _global_init (59)          | Local Write  |
| SC_PE211_OK%MX1.8          |              |
| PLC_PRG.SC_OUTPUTS (22)    | Local Write  |
| _global_init (27)          | Local Write  |
| SC_PE203_PSL_HI%MX1.1      |              |
| PLC_PRG.SC_OUTPUTS (17)    | Local Write  |
| _global_init (23)          | Local Write  |
| tonConnect                 |              |
| ACTUATOR_SM.CONNECT (6)    | Local Write  |
| ACTUATOR_SM.CONNECT (25)   | Local Read   |
| ACTUATOR_SM.DRG1_W... (26) | Local Read   |
| ACTUATOR_SM.PCMD_W... (27) | Local Read   |
| ACTUATOR_SM.STATUS... (26) | Local Read   |
| ACTUATORinit (7)           | Local Read   |
| SOCKET_AF_UNSPEC           |              |
| _global_init (85)          | Global Write |
| SOCKET_AF_LOCAL            |              |
| _global_init (86)          | Global Write |
| SC_V204_OPEN_PERMIT%MX5.11 |              |
| PLC_PRG.SC_OUTPUTS (71)    | Local Write  |
| _global_init (68)          | Local Write  |
| SC_V100_CLOSED%MX3.1       |              |
| PLC_PRG.SC_OUTPUTS (38)    | Local Write  |
| _global_init (40)          | Local Write  |
| SC_PE101_PSL%MX0.8         |              |
| PLC_PRG.SC_OUTPUTS (7)     | Local Write  |
| _global_init (15)          | Local Write  |
| strAddress                 |              |

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|----------------------------|--------------|
| ACTUATOR_SM.CONNECT (25)   | Local Read   |
| ACTUATOR_SM.DRG1_W... (26) | Local Read   |
| ACTUATOR_SM.PCMD_W... (27) | Local Read   |
| ACTUATOR_SM.STATUS... (26) | Local Read   |
| _global_init (1)           | Local Write  |
| SOCKET_TCP_MAXSEG          |              |
| _global_init (137)         | Global Write |
| SOCKET_STREAM              |              |
| CLIENT_OPENCLOSE (11)      | Global Read  |
| _global_init (138)         | Global Write |
| SOCKET_SO_SNDLOWAT         |              |
| _global_init (129)         | Global Write |
| SOCKET_SO_RCVTIMEO         |              |
| _global_init (132)         | Global Write |
| SOCKET_SO_SNDBUF           |              |
| _global_init (127)         | Global Write |
| SOCKET_SO_RCVLOWAT         |              |
| _global_init (130)         | Global Write |
| SOCKET_SO_ERROR            |              |
| _global_init (133)         | Global Write |
| SOCKET_SO_RCVBUF           |              |
| _global_init (128)         | Global Write |
| SOCKET_MSG_OOB             |              |
| _global_init (158)         | Global Write |
| SOCKET_IPPROTO_TCP         |              |
| CLIENT_OPENCLOSE (11)      | Global Read  |
| _global_init (151)         | Global Write |
| SOCKET_IPPROTO_PUP         |              |
| _global_init (152)         | Global Write |
| SOCKET_IPPROTO_ND          |              |
| _global_init (155)         | Global Write |
| SOCKET_SEQPACKET           |              |
| _global_init (142)         | Global Write |
| SOCKET_DGRAM               |              |
| CLIENT_OPENCLOSE (43)      | Global Read  |
| ETHERNET_MODBUSMAS... (9)  | Global Read  |
| _global_init (139)         | Global Write |
| SOCKET_SO_PROTOTYPE        |              |
| _global_init (135)         | Global Write |
| SOCKET_RAW                 |              |
| _global_init (140)         | Global Write |
| SOCKET_IPPROTO_RAW         |              |
| _global_init (156)         | Global Write |
| SOCKET_IPPROTO_UDP         |              |
| CLIENT_OPENCLOSE (43)      | Global Read  |
| ETHERNET_MODBUSMAS... (9)  | Global Read  |
| _global_init (153)         | Global Write |
| SOCKET_INADDR_NONE         |              |
| _global_init (146)         | Global Write |
| SOCKET_AF_UNIX             |              |
| _global_init (87)          | Global Write |
| SOCKET_AF_MAX              |              |
| _global_init (113)         | Global Write |
| SOCKET_AF_NS               |              |
| _global_init (92)          | Global Write |
| SOCKET_AF_LINK             |              |
| _global_init (105)         | Global Write |
| SOCKET_AF_LAT              |              |
| _global_init (101)         | Global Write |
| SOCKET_AF_ISO              |              |
| _global_init (93)          | Global Write |
| SOCKET_AF_IPX              |              |
| _global_init (110)         | Global Write |
| SOCKET_AF_INET_STREAMS     |              |
| _global_init (115)         | Global Write |
| SOCKET_AF_INET_BSD         |              |
| _global_init (114)         | Global Write |
| SOCKET_AF_INET             |              |
| CLIENT_OPENCLOSE (11)      | Global Read  |
| CLIENT_OPENCLOSE (27)      | Global Read  |
| CLIENT_OPENCLOSE (43)      | Global Read  |
| ETHERNET_MODBUSMAS... (9)  | Global Read  |
| ETHERNET_MODBUSMAS... (12) | Global Read  |

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| _global_init (88)           | Global Write |
| SOCKET_AF_COIP              |              |
| _global_init (107)          | Global Write |
| SOCKET_AF_ECMA              |              |
| _global_init (95)           | Global Write |
| SOCKET_AF_CHAOS             |              |
| _global_init (91)           | Global Write |
| SOCKET_AF_IMPLINK           |              |
| _global_init (89)           | Global Write |
| SOCKET_AF_HYLINK            |              |
| _global_init (102)          | Global Write |
| SOCKET_AF_DLI               |              |
| _global_init (100)          | Global Write |
| SOCKET_AF_DECnet            |              |
| _global_init (99)           | Global Write |
| SOCKET_AF_DATAKIT           |              |
| _global_init (96)           | Global Write |
| SC_VERSION_MINOR%MW1281     |              |
| PLC_PRG.SC_OUTPUTS (157)    | Local Write  |
| _global_init (148)          | Local Write  |
| SOCKET_AF_CNT               |              |
| _global_init (108)          | Global Write |
| SC_VENT212_SLOW_CMD%MX8.11  |              |
| PLC_PRG.SC_OUTPUTS (99)     | Local Write  |
| _global_init (90)           | Local Write  |
| SC_VENT212_FAST_CMD%MX8.12  |              |
| PLC_PRG.SC_OUTPUTS (100)    | Local Write  |
| _global_init (91)           | Local Write  |
| SOCKET_AF_APPLETALK         |              |
| _global_init (103)          | Global Write |
| SC_V204_OPEN_PERMIT%MX5.11  |              |
| PLC_PRG.SC_OUTPUTS (71)     | Local Write  |
| _global_init (68)           | Local Write  |
| SOCKET_AF_CCITT             |              |
| _global_init (97)           | Global Write |
| SC_VENT211_FAST_CMD%MX6.12  |              |
| PLC_PRG.SC_OUTPUTS (81)     | Local Write  |
| _global_init (76)           | Local Write  |
| SC_VENT211_SLOW_CMD%MX6.11  |              |
| PLC_PRG.SC_OUTPUTS (80)     | Local Write  |
| _global_init (75)           | Local Write  |
| SC_V204_OPN_REQ%MX641.8     |              |
| PLC_PRG.CLEAR_REQS (14)     | Local Write  |
| PLC_PRG.SC_INPUTS (13)      | Local Read   |
| _global_init (139)          | Local Write  |
| SC_V204_OPEN%MX5.9          |              |
| PLC_PRG.SC_OUTPUTS (69)     | Local Write  |
| _global_init (66)           | Local Write  |
| SC_V204_OPEN_CMD%MX5.13     |              |
| PLC_PRG.SC_OUTPUTS (73)     | Local Write  |
| _global_init (70)           | Local Write  |
| SC_V204_OPEN_CMD%MX5.13     |              |
| PLC_PRG.SC_OUTPUTS (73)     | Local Write  |
| _global_init (70)           | Local Write  |
| SC_V204_NOT_SYMBOL%MX5.14   |              |
| PLC_PRG.SC_OUTPUTS (74)     | Local Write  |
| _global_init (71)           | Local Write  |
| SC_V204_CLS_REQ%MX641.9     |              |
| PLC_PRG.CLEAR_REQS (15)     | Local Write  |
| PLC_PRG.SC_INPUTS (14)      | Local Read   |
| _global_init (140)          | Local Write  |
| SC_V204_CLS_REQ%MX641.9     |              |
| PLC_PRG.CLEAR_REQS (15)     | Local Write  |
| PLC_PRG.SC_INPUTS (14)      | Local Read   |
| _global_init (140)          | Local Write  |
| SC_V204_CLOSED%MX5.10       |              |
| PLC_PRG.SC_OUTPUTS (70)     | Local Write  |
| _global_init (67)           | Local Write  |
| SC_V204_CLOSE_PERMIT%MX5.12 |              |
| PLC_PRG.SC_OUTPUTS (72)     | Local Write  |
| _global_init (69)           | Local Write  |
| SC_V204_BEAM_PASS%MX5.8     |              |
| PLC_PRG.SC_OUTPUTS (68)     | Local Write  |



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| _global_init (65)          | Local Write |
| SC_V203_OPN_REQ%MX641.6    |             |
| PLC_PRG.CLEAR_REQS (11)    | Local Write |
| PLC_PRG.SC_INPUTS (11)     | Local Read  |
| _global_init (137)         | Local Write |
| SC_V204_BEAM_PASS%MX5.8    |             |
| PLC_PRG.SC_OUTPUTS (68)    | Local Write |
| _global_init (65)          | Local Write |
| SC_V203_OPEN_PERMIT%MX5.3  |             |
| PLC_PRG.SC_OUTPUTS (63)    | Local Write |
| _global_init (61)          | Local Write |
| SC_V203_OPEN_PERMIT%MX5.3  |             |
| PLC_PRG.SC_OUTPUTS (63)    | Local Write |
| _global_init (61)          | Local Write |
| SC_V203_OPEN_CMD%MX5.5     |             |
| PLC_PRG.SC_OUTPUTS (65)    | Local Write |
| _global_init (63)          | Local Write |
| SC_V203_OPEN%MX5.1         |             |
| PLC_PRG.SC_OUTPUTS (61)    | Local Write |
| _global_init (59)          | Local Write |
| SC_V203_NOT_SYMBOL%MX5.6   |             |
| PLC_PRG.SC_OUTPUTS (66)    | Local Write |
| _global_init (64)          | Local Write |
| SC_V203_CLS_REQ%MX641.7    |             |
| PLC_PRG.CLEAR_REQS (12)    | Local Write |
| PLC_PRG.SC_INPUTS (12)     | Local Read  |
| _global_init (138)         | Local Write |
| SC_V203_CLOSED%MX5.2       |             |
| PLC_PRG.SC_OUTPUTS (62)    | Local Write |
| _global_init (60)          | Local Write |
| SC_V203_CLOSED%MX5.2       |             |
| PLC_PRG.SC_OUTPUTS (62)    | Local Write |
| _global_init (60)          | Local Write |
| SC_V203_CLOSE_PERMIT%MX5.4 |             |
| PLC_PRG.SC_OUTPUTS (64)    | Local Write |
| _global_init (62)          | Local Write |
| SC_V203_CLOSE_PERMIT%MX5.4 |             |
| PLC_PRG.SC_OUTPUTS (64)    | Local Write |
| _global_init (62)          | Local Write |
| SC_V203_BEAM_PASS%MX5.0    |             |
| PLC_PRG.SC_OUTPUTS (60)    | Local Write |
| PLC_PRG.SC_OUTPUTS (68)    | Local Read  |
| _global_init (58)          | Local Write |
| SC_V203_BEAM_PASS%MX5.0    |             |
| PLC_PRG.SC_OUTPUTS (60)    | Local Write |
| PLC_PRG.SC_OUTPUTS (68)    | Local Read  |
| _global_init (58)          | Local Write |
| SC_V202_CLOSED%MX4.9       |             |
| PLC_PRG.SC_OUTPUTS (57)    | Local Write |
| _global_init (56)          | Local Write |
| SC_V202_OPEN%MX4.8         |             |
| PLC_PRG.SC_OUTPUTS (56)    | Local Write |
| _global_init (55)          | Local Write |
| SC_V202_BEAM_PASS%MX4.10   |             |
| PLC_PRG.SC_OUTPUTS (58)    | Local Write |
| PLC_PRG.SC_OUTPUTS (60)    | Local Read  |
| _global_init (57)          | Local Write |
| SC_V201_OPN_REQ%MX641.2    |             |
| PLC_PRG.CLEAR_REQS (8)     | Local Write |
| PLC_PRG.SC_INPUTS (9)      | Local Read  |
| _global_init (135)         | Local Write |
| SC_V202_BEAM_PASS%MX4.10   |             |
| PLC_PRG.SC_OUTPUTS (58)    | Local Write |
| PLC_PRG.SC_OUTPUTS (60)    | Local Read  |
| _global_init (57)          | Local Write |
| SC_V201_OPEN_PERMIT%MX4.3  |             |
| PLC_PRG.SC_OUTPUTS (51)    | Local Write |
| _global_init (51)          | Local Write |
| SC_V202_CLOSED%MX4.9       |             |
| PLC_PRG.SC_OUTPUTS (57)    | Local Write |
| _global_init (56)          | Local Write |
| SC_V201_OPEN_CMD%MX4.5     |             |
| PLC_PRG.SC_OUTPUTS (53)    | Local Write |

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| _global_init (53)           | Local Write |
| SC_V201_OPEN%MX4.1          |             |
| PLC_PRG.SC_OUTPUTS (49)     | Local Write |
| _global_init (49)           | Local Write |
| SC_V201_OPEN_PERMIT%MX4.3   |             |
| PLC_PRG.SC_OUTPUTS (51)     | Local Write |
| _global_init (51)           | Local Write |
| SC_V201_OPEN_CMD%MX4.5      |             |
| PLC_PRG.SC_OUTPUTS (53)     | Local Write |
| _global_init (53)           | Local Write |
| SC_V201_NOT_SYMBOL%MX4.6    |             |
| PLC_PRG.SC_OUTPUTS (54)     | Local Write |
| _global_init (54)           | Local Write |
| SC_V201_NOT_SYMBOL%MX4.6    |             |
| PLC_PRG.SC_OUTPUTS (54)     | Local Write |
| _global_init (54)           | Local Write |
| SC_V201_OPEN%MX4.1          |             |
| PLC_PRG.SC_OUTPUTS (49)     | Local Write |
| _global_init (49)           | Local Write |
| SC_V201_CLS_REQ%MX641.3     |             |
| PLC_PRG.CLEAR_REQS (9)      | Local Write |
| PLC_PRG.SC_INPUTS (10)      | Local Read  |
| _global_init (136)          | Local Write |
| SC_V201_CLOSED%MX4.2        |             |
| PLC_PRG.SC_OUTPUTS (50)     | Local Write |
| _global_init (50)           | Local Write |
| SC_V201_CLOSE_PERMIT%MX4.4  |             |
| PLC_PRG.SC_OUTPUTS (52)     | Local Write |
| _global_init (52)           | Local Write |
| SC_V201_CLOSE_PERMIT%MX4.4  |             |
| PLC_PRG.SC_OUTPUTS (52)     | Local Write |
| _global_init (52)           | Local Write |
| SC_V201_BEAM_PASS%MX4.0     |             |
| PLC_PRG.SC_OUTPUTS (48)     | Local Write |
| PLC_PRG.SC_OUTPUTS (58)     | Local Read  |
| _global_init (48)           | Local Write |
| SC_V201_CLOSED%MX4.2        |             |
| PLC_PRG.SC_OUTPUTS (50)     | Local Write |
| _global_init (50)           | Local Write |
| SC_V101_OPN_REQ%MX641.0     |             |
| PLC_PRG.CLEAR_REQS (5)      | Local Write |
| PLC_PRG.SC_INPUTS (7)       | Local Read  |
| _global_init (133)          | Local Write |
| SC_V101_OPEN_PERMIT%MX3.11  |             |
| PLC_PRG.SC_OUTPUTS (43)     | Local Write |
| _global_init (44)           | Local Write |
| SC_V101_OPEN_PERMIT%MX3.11  |             |
| PLC_PRG.SC_OUTPUTS (43)     | Local Write |
| _global_init (44)           | Local Write |
| SC_V101_OPEN_CMD%MX3.13     |             |
| PLC_PRG.SC_OUTPUTS (45)     | Local Write |
| _global_init (46)           | Local Write |
| SC_V101_OPEN_CMD%MX3.13     |             |
| PLC_PRG.SC_OUTPUTS (45)     | Local Write |
| _global_init (46)           | Local Write |
| SC_V101_CLOSE_PERMIT%MX3.12 |             |
| PLC_PRG.SC_OUTPUTS (44)     | Local Write |
| _global_init (45)           | Local Write |
| SC_V101_OPEN%MX3.9          |             |
| PLC_PRG.SC_OUTPUTS (41)     | Local Write |
| _global_init (42)           | Local Write |
| SC_V101_CLOSE_PERMIT%MX3.12 |             |
| PLC_PRG.SC_OUTPUTS (44)     | Local Write |
| _global_init (45)           | Local Write |
| SC_V101_OPEN%MX3.9          |             |
| PLC_PRG.SC_OUTPUTS (41)     | Local Write |
| _global_init (42)           | Local Write |
| SC_V101_NOT_SYMBOL%MX3.14   |             |
| PLC_PRG.SC_OUTPUTS (46)     | Local Write |
| _global_init (47)           | Local Write |
| SC_V101_CLS_REQ%MX641.1     |             |
| PLC_PRG.CLEAR_REQS (6)      | Local Write |
| PLC_PRG.SC_INPUTS (8)       | Local Read  |

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|------------------------------------|-------------|
| _global_init (134)                 | Local Write |
| SC_V101_BEAM_PASS%MX3.8            |             |
| PLC_PRG.SC_OUTPUTS (40)            | Local Write |
| _global_init (41)                  | Local Write |
| SC_TP212_OK%MX11.8                 |             |
| PLC_PRG.SC_OUTPUTS (127)           | Local Write |
| _global_init (111)                 | Local Write |
| SC_TP211_ON%MX11.1                 |             |
| PLC_PRG.SC_OUTPUTS (124)           | Local Write |
| _global_init (109)                 | Local Write |
| SC_V101_NOT_SYMBOL%MX3.14          |             |
| PLC_PRG.SC_OUTPUTS (46)            | Local Write |
| _global_init (47)                  | Local Write |
| SC_V101_CLOSED%MX3.10              |             |
| PLC_PRG.SC_OUTPUTS (42)            | Local Write |
| _global_init (43)                  | Local Write |
| SC_V100_CLOSED%MX3.1               |             |
| PLC_PRG.SC_OUTPUTS (38)            | Local Write |
| _global_init (40)                  | Local Write |
| SC_TPV212_OPEN%MX9.1               |             |
| PLC_PRG.SC_OUTPUTS (102)           | Local Write |
| _global_init (92)                  | Local Write |
| SC_TPV211_OPEN_CMD%MX7.5           |             |
| PLC_PRG.SC_OUTPUTS (85)            | Local Write |
| _global_init (79)                  | Local Write |
| SC_V100_OPEN%MX3.0                 |             |
| PLC_PRG.SC_OUTPUTS (37)            | Local Write |
| _global_init (39)                  | Local Write |
| SC_TPV212_OPEN_CMD%MX9.5           |             |
| PLC_PRG.SC_OUTPUTS (104)           | Local Write |
| _global_init (94)                  | Local Write |
| SC_TPV212_CLOSED%MX9.2             |             |
| PLC_PRG.SC_OUTPUTS (103)           | Local Write |
| _global_init (93)                  | Local Write |
| SC_TPV211_OPEN%MX7.1               |             |
| PLC_PRG.SC_OUTPUTS (83)            | Local Write |
| _global_init (77)                  | Local Write |
| SC_TP201_VENT_ENABLE_REQ%MX641.12  |             |
| PLC_PRG.CLEAR_REQS (19)            | Local Write |
| PLC_PRG.SC_INPUTS (17)             | Local Read  |
| _global_init (143)                 | Local Write |
| SC_TP212_OK%MX11.8                 |             |
| PLC_PRG.SC_OUTPUTS (127)           | Local Write |
| _global_init (111)                 | Local Write |
| SC_TP201_VENT_ENABLE_CMD%MX10.5    |             |
| PLC_PRG.SC_OUTPUTS (112)           | Local Write |
| _global_init (99)                  | Local Write |
| SC_TPV211_CLOSED%MX7.2             |             |
| PLC_PRG.SC_OUTPUTS (84)            | Local Write |
| _global_init (78)                  | Local Write |
| SC_TP212_ON%MX11.9                 |             |
| PLC_PRG.SC_OUTPUTS (128)           | Local Write |
| _global_init (112)                 | Local Write |
| SC_TP212_OFF%MX11.10               |             |
| PLC_PRG.SC_OUTPUTS (129)           | Local Write |
| _global_init (113)                 | Local Write |
| SC_TP211_ON%MX11.1                 |             |
| PLC_PRG.SC_OUTPUTS (124)           | Local Write |
| _global_init (109)                 | Local Write |
| SC_TP211_OFF%MX11.2                |             |
| PLC_PRG.SC_OUTPUTS (125)           | Local Write |
| _global_init (110)                 | Local Write |
| SC_TP211_OK%MX11.0                 |             |
| PLC_PRG.SC_OUTPUTS (123)           | Local Write |
| _global_init (108)                 | Local Write |
| SC_TP201_VENT_NOT_SYMBOL%MX10.6    |             |
| PLC_PRG.SC_OUTPUTS (113)           | Local Write |
| _global_init (100)                 | Local Write |
| SC_TP201_VENT_DISABLE_REQ%MX641.13 |             |
| PLC_PRG.CLEAR_REQS (20)            | Local Write |
| PLC_PRG.SC_INPUTS (18)             | Local Read  |
| _global_init (144)                 | Local Write |
| SC_TP201_ON_REQ%MX641.10           |             |

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|---------------------------------|-------------|
| PLC_PRG.CLEAR_REQS (17)         | Local Write |
| PLC_PRG.SC_INPUTS (15)          | Local Read  |
| _global_init (141)              | Local Write |
| SC_TP201_ON_PERMIT%MX10.11      |             |
| PLC_PRG.SC_OUTPUTS (118)        | Local Write |
| _global_init (104)              | Local Write |
| SC_TP201_ON_CMD%MX10.13         |             |
| PLC_PRG.SC_OUTPUTS (120)        | Local Write |
| _global_init (106)              | Local Write |
| SC_TP201_ON%MX10.9              |             |
| PLC_PRG.SC_OUTPUTS (116)        | Local Write |
| _global_init (102)              | Local Write |
| SC_TP201_OK%MX10.8              |             |
| PLC_PRG.SC_OUTPUTS (115)        | Local Write |
| _global_init (101)              | Local Write |
| SC_TP201_OK%MX10.8              |             |
| PLC_PRG.SC_OUTPUTS (115)        | Local Write |
| _global_init (101)              | Local Write |
| SC_TP201_OFF_PERMIT%MX10.12     |             |
| PLC_PRG.SC_OUTPUTS (119)        | Local Write |
| _global_init (105)              | Local Write |
| SC_TP201_OFF%MX10.10            |             |
| PLC_PRG.SC_OUTPUTS (117)        | Local Write |
| _global_init (103)              | Local Write |
| SC_TP201_NOT_SYMBOL%MX10.14     |             |
| PLC_PRG.SC_OUTPUTS (121)        | Local Write |
| _global_init (107)              | Local Write |
| SC_SLOTV211_CLOSED%MX7.10       |             |
| PLC_PRG.SC_OUTPUTS (88)         | Local Write |
| _global_init (81)               | Local Write |
| SC_SLOTV211_CLOSE_PERMIT%MX7.12 |             |
| PLC_PRG.SC_OUTPUTS (90)         | Local Write |
| _global_init (83)               | Local Write |
| SC_SLOTV211_CLOSE_CMD%MX7.14    |             |
| PLC_PRG.SC_OUTPUTS (92)         | Local Write |
| _global_init (85)               | Local Write |
| SC_RPV212_OPEN%MX8.1            |             |
| PLC_PRG.SC_OUTPUTS (95)         | Local Write |
| _global_init (87)               | Local Write |
| SC_V101_BEAM_PASS%MX3.8         |             |
| PLC_PRG.SC_OUTPUTS (40)         | Local Write |
| _global_init (41)               | Local Write |
| SC_TPV212_OPEN_CMD%MX9.5        |             |
| PLC_PRG.SC_OUTPUTS (104)        | Local Write |
| _global_init (94)               | Local Write |
| SC_RP2111_AT_SPEED%MX0.13       |             |
| PLC_PRG.SC_OUTPUTS (12)         | Local Write |
| _global_init (19)               | Local Write |
| SC_TP212_OFF%MX11.10            |             |
| PLC_PRG.SC_OUTPUTS (129)        | Local Write |
| _global_init (113)              | Local Write |
| SC_RP2110_AT_SPEED%MX0.12       |             |
| PLC_PRG.SC_OUTPUTS (11)         | Local Write |
| _global_init (18)               | Local Write |
| SC_RPV212_OPEN_CMD%MX8.5        |             |
| PLC_PRG.SC_OUTPUTS (97)         | Local Write |
| _global_init (89)               | Local Write |
| SC_RESET_REQUIRED%MX0.0         |             |
| PLC_PRG.SC_OUTPUTS (2)          | Local Write |
| _global_init (12)               | Local Write |
| SC_PE212_PSL_MIDLO%MX2.3        |             |
| PLC_PRG.SC_OUTPUTS (31)         | Local Write |
| _global_init (35)               | Local Write |
| SC_PE212_PSL_HI%MX2.1           |             |
| PLC_PRG.SC_OUTPUTS (29)         | Local Write |
| _global_init (33)               | Local Write |
| SC_RP2111_AT_SPEED%MX0.13       |             |
| PLC_PRG.SC_OUTPUTS (12)         | Local Write |
| _global_init (19)               | Local Write |
| SC_PE212_OK%MX2.0               |             |
| PLC_PRG.SC_OUTPUTS (28)         | Local Write |
| _global_init (32)               | Local Write |
| SC_PE212_PSL_MIDLO%MX2.3        |             |

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| PLC_PRG.SC_OUTPUTS (31)   | Local Write |
| _global_init (35)         | Local Write |
| SC_PE211_PSL_MIDHI%MX1.10 |             |
| PLC_PRG.SC_OUTPUTS (24)   | Local Write |
| _global_init (29)         | Local Write |
| SC_PE2110_PSL%MX0.14      |             |
| PLC_PRG.SC_OUTPUTS (13)   | Local Write |
| _global_init (20)         | Local Write |
| SC_RP2110_AT_SPEED%MX0.12 |             |
| PLC_PRG.SC_OUTPUTS (11)   | Local Write |
| _global_init (18)         | Local Write |
| SC_ATB%MX0.2              |             |
| PLC_PRG.SC_OUTPUTS (3)    | Local Write |
| _global_init (13)         | Local Write |
| SC_RESET_REQUIRED%MX0.0   |             |
| PLC_PRG.SC_OUTPUTS (2)    | Local Write |
| _global_init (12)         | Local Write |
| SC_PE211_PSL_MIDHI%MX1.10 |             |
| PLC_PRG.SC_OUTPUTS (24)   | Local Write |
| _global_init (29)         | Local Write |
| SC_PE203_OK%MX1.0         |             |
| PLC_PRG.SC_OUTPUTS (16)   | Local Write |
| _global_init (22)         | Local Write |
| SC_PE2111_PSL%MX0.15      |             |
| PLC_PRG.SC_OUTPUTS (14)   | Local Write |
| _global_init (21)         | Local Write |
| SC_PE203_PSL_MIDHI%MX1.2  |             |
| PLC_PRG.SC_OUTPUTS (18)   | Local Write |
| _global_init (24)         | Local Write |
| open_req                  |             |
| PLC_PRG.VALVES (7)        | Local Write |
| PLC_PRG.VALVES (15)       | Local Write |
| PLC_PRG.VALVES (23)       | Local Write |
| PLC_PRG.VALVES (31)       | Local Write |
| PLC_PRG.VALVES (39)       | Local Write |
| PLC_PRG.VALVES (57)       | Local Write |
| PLC_PRG.VALVES (65)       | Local Write |
| PLC_PRG.VALVES (73)       | Local Write |
| PLC_PRG.VALVES (81)       | Local Write |
| PLC_PRG.VALVES (89)       | Local Write |
| PLC_PRG.VALVES (97)       | Local Write |
| PLC_PRG.VALVES (105)      | Local Write |
| PLC_PRG.VALVES (113)      | Local Write |
| VALVE_FB (3)              | Local Read  |
| VALVE_FBinit (4)          | Local Write |
| open_intlk                |             |
| PLC_PRG.VALVES (4)        | Local Write |
| PLC_PRG.VALVES (12)       | Local Write |
| PLC_PRG.VALVES (20)       | Local Write |
| PLC_PRG.VALVES (28)       | Local Write |
| PLC_PRG.VALVES (36)       | Local Write |
| PLC_PRG.VALVES (54)       | Local Write |
| PLC_PRG.VALVES (62)       | Local Write |
| PLC_PRG.VALVES (70)       | Local Write |
| PLC_PRG.VALVES (78)       | Local Write |
| PLC_PRG.VALVES (86)       | Local Write |
| PLC_PRG.VALVES (94)       | Local Write |
| PLC_PRG.VALVES (102)      | Local Write |
| PLC_PRG.VALVES (110)      | Local Write |
| VALVE_FB (3)              | Local Read  |
| VALVE_FB (6)              | Local Read  |
| VALVE_FBinit (1)          | Local Write |
| open_intlk                |             |
| PLC_PRG.VALVES (45)       | Local Write |
| VALVE_BI_FB (4)           | Local Read  |
| VALVE_BI_FB (11)          | Local Read  |
| VALVE_BI_FBinit (1)       | Local Write |
| wCommand                  |             |
| ACTUATOR_SM (48)          | Local Write |
| ACTUATOR_SM (57)          | Local Write |
| ACTUATOR_SM (65)          | Local Write |
| ACTUATOR_SM (74)          | Local Write |
| ACTUATOR_SM (83)          | Local Write |

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| ACTUATOR_SM.DRG1_W... (26)      | Local Read   |
| ACTUATORinit (4)                | Local Write  |
| SOCKET_RDM                      |              |
| _global_init (141)              | Global Write |
| SOCKET_MSG_PEEK                 |              |
| _global_init (159)              | Global Write |
| SOCKET_MSG_DONTROUTE            |              |
| _global_init (160)              | Global Write |
| SOCKET_IPPROTO_MAX              |              |
| _global_init (157)              | Global Write |
| SOCKET_IPPROTO_IP               |              |
| _global_init (147)              | Global Write |
| SOCKET_IPPROTO_IGMP             |              |
| _global_init (149)              | Global Write |
| SOCKET_IPPROTO_IDP              |              |
| _global_init (154)              | Global Write |
| SOCKET_IPPROTO_ICMP             |              |
| _global_init (148)              | Global Write |
| SOCKET_IPPROTO_GGP              |              |
| _global_init (150)              | Global Write |
| SOCKET_INADDR_LOOPBACK          |              |
| _global_init (144)              | Global Write |
| SOCKET_INADDR_BROADCAST         |              |
| _global_init (145)              | Global Write |
| SOCKET_FIONREAD                 |              |
| _global_init (161)              | Global Write |
| SOCKET_FIONBIO                  |              |
| CLIENT_OPENCLOSE (25)           | Global Read  |
| CLIENT_OPENCLOSE (46)           | Global Read  |
| ETHERNET_MODBUSMAS... (11)      | Global Read  |
| _global_init (162)              | Global Write |
| SOCKET_INADDR_ANY               |              |
| _global_init (143)              | Global Write |
| SOCKET_FD_SETSIZE               |              |
| _global_init (163)              | Global Write |
| SC_V204_OPEN%MX5.9              |              |
| PLC_PRG.SC_OUTPUTS (69)         | Local Write  |
| _global_init (66)               | Local Write  |
| SC_V204_NOT_SYMBOL%MX5.14       |              |
| PLC_PRG.SC_OUTPUTS (74)         | Local Write  |
| _global_init (71)               | Local Write  |
| SC_TPV212_OPEN%MX9.1            |              |
| PLC_PRG.SC_OUTPUTS (102)        | Local Write  |
| _global_init (92)               | Local Write  |
| SC_TPV212_CLOSED%MX9.2          |              |
| PLC_PRG.SC_OUTPUTS (103)        | Local Write  |
| _global_init (93)               | Local Write  |
| SC_V204_CLOSED%MX5.10           |              |
| PLC_PRG.SC_OUTPUTS (70)         | Local Write  |
| _global_init (67)               | Local Write  |
| SC_RPV211_OPEN_CMD%MX6.5        |              |
| PLC_PRG.SC_OUTPUTS (78)         | Local Write  |
| _global_init (74)               | Local Write  |
| SC_V204_CLOSE_PERMIT%MX5.12     |              |
| PLC_PRG.SC_OUTPUTS (72)         | Local Write  |
| _global_init (69)               | Local Write  |
| SC_TPV211_OPEN_CMD%MX7.5        |              |
| PLC_PRG.SC_OUTPUTS (85)         | Local Write  |
| _global_init (79)               | Local Write  |
| SC_TP212_ON%MX11.9              |              |
| PLC_PRG.SC_OUTPUTS (128)        | Local Write  |
| _global_init (112)              | Local Write  |
| SC_TPV211_OPEN%MX7.1            |              |
| PLC_PRG.SC_OUTPUTS (83)         | Local Write  |
| _global_init (77)               | Local Write  |
| SC_TP201_OFF_REQ%MX641.11       |              |
| PLC_PRG.CLEAR_REQS (18)         | Local Write  |
| PLC_PRG.SC_INPUTS (16)          | Local Read   |
| _global_init (142)              | Local Write  |
| SC_TP201_VENT_ENABLE_CMD%MX10.5 |              |
| PLC_PRG.SC_OUTPUTS (112)        | Local Write  |
| _global_init (99)               | Local Write  |
| SC_SLOTV211_OPEN_PERMIT%MX7.11  |              |

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| PLC_PRG.SC_OUTPUTS (89)            | Local Write |
| _global_init (82)                  | Local Write |
| SC_SLOTV211_OPEN_CMD%MX7.13        |             |
| PLC_PRG.SC_OUTPUTS (91)            | Local Write |
| _global_init (84)                  | Local Write |
| SC_TPV211_CLOSED%MX7.2             |             |
| PLC_PRG.SC_OUTPUTS (84)            | Local Write |
| _global_init (78)                  | Local Write |
| SC_RPV211_OPEN%MX6.1               |             |
| PLC_PRG.SC_OUTPUTS (76)            | Local Write |
| _global_init (72)                  | Local Write |
| SC_RPV211_CLOSED%MX6.2             |             |
| PLC_PRG.SC_OUTPUTS (77)            | Local Write |
| _global_init (73)                  | Local Write |
| SC_V203_NOT_SYMBOL%MX5.6           |             |
| PLC_PRG.SC_OUTPUTS (66)            | Local Write |
| _global_init (64)                  | Local Write |
| SC_V203_CLS_REQ%MX641.7            |             |
| PLC_PRG.CLEAR_REQS (12)            | Local Write |
| PLC_PRG.SC_INPUTS (12)             | Local Read  |
| _global_init (138)                 | Local Write |
| SC_V201_CLS_REQ%MX641.3            |             |
| PLC_PRG.CLEAR_REQS (9)             | Local Write |
| PLC_PRG.SC_INPUTS (10)             | Local Read  |
| _global_init (136)                 | Local Write |
| SC_V101_CLS_REQ%MX641.1            |             |
| PLC_PRG.CLEAR_REQS (6)             | Local Write |
| PLC_PRG.SC_INPUTS (8)              | Local Read  |
| _global_init (134)                 | Local Write |
| SC_V101_OPN_REQ%MX641.0            |             |
| PLC_PRG.CLEAR_REQS (5)             | Local Write |
| PLC_PRG.SC_INPUTS (7)              | Local Read  |
| _global_init (133)                 | Local Write |
| SC_TP211_OK%MX11.0                 |             |
| PLC_PRG.SC_OUTPUTS (123)           | Local Write |
| _global_init (108)                 | Local Write |
| SC_TP201_VENT_ENABLE_REQ%MX641.12  |             |
| PLC_PRG.CLEAR_REQS (19)            | Local Write |
| PLC_PRG.SC_INPUTS (17)             | Local Read  |
| _global_init (143)                 | Local Write |
| SC_TP211_OFF%MX11.2                |             |
| PLC_PRG.SC_OUTPUTS (125)           | Local Write |
| _global_init (110)                 | Local Write |
| SC_TP201_VENT_DISABLE_REQ%MX641.13 |             |
| PLC_PRG.CLEAR_REQS (20)            | Local Write |
| PLC_PRG.SC_INPUTS (18)             | Local Read  |
| _global_init (144)                 | Local Write |
| SC_TP201_ON%MX10.9                 |             |
| PLC_PRG.SC_OUTPUTS (116)           | Local Write |
| _global_init (102)                 | Local Write |
| SC_TP201_VENT_NOT_SYMBOL%MX10.6    |             |
| PLC_PRG.SC_OUTPUTS (113)           | Local Write |
| _global_init (100)                 | Local Write |
| SC_TP201_ON_REQ%MX641.10           |             |
| PLC_PRG.CLEAR_REQS (17)            | Local Write |
| PLC_PRG.SC_INPUTS (15)             | Local Read  |
| _global_init (141)                 | Local Write |
| SC_TP201_ON_PERMIT%MX10.11         |             |
| PLC_PRG.SC_OUTPUTS (118)           | Local Write |
| _global_init (104)                 | Local Write |
| SC_TP201_OFF_REQ%MX641.11          |             |
| PLC_PRG.CLEAR_REQS (18)            | Local Write |
| PLC_PRG.SC_INPUTS (16)             | Local Read  |
| _global_init (142)                 | Local Write |
| SC_TP201_OFF%MX10.10               |             |
| PLC_PRG.SC_OUTPUTS (117)           | Local Write |
| _global_init (103)                 | Local Write |
| SC_TP201_ON_CMD%MX10.13            |             |
| PLC_PRG.SC_OUTPUTS (120)           | Local Write |
| _global_init (106)                 | Local Write |
| SC_TP201_OFF_PERMIT%MX10.12        |             |
| PLC_PRG.SC_OUTPUTS (119)           | Local Write |
| _global_init (105)                 | Local Write |

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| SC_TP201_NOT_SYMBOL%MX10.14     |  |             |
| PLC_PRG.SC_OUTPUTS (121)        |  | Local Write |
| _global_init (107)              |  | Local Write |
| SC_SLOTV211_OPN_REQ%MX642.0     |  |             |
| PLC_PRG.CLEAR_REQS (22)         |  | Local Write |
| PLC_PRG.SC_INPUTS (19)          |  | Local Read  |
| _global_init (145)              |  | Local Write |
| SC_SLOTV211_OPN_REQ%MX642.0     |  |             |
| PLC_PRG.CLEAR_REQS (22)         |  | Local Write |
| PLC_PRG.SC_INPUTS (19)          |  | Local Read  |
| _global_init (145)              |  | Local Write |
| SC_SLOTV211_OPEN_CMD%MX7.13     |  |             |
| PLC_PRG.SC_OUTPUTS (91)         |  | Local Write |
| _global_init (84)               |  | Local Write |
| SC_SLOTV211_OPEN_PERMIT%MX7.11  |  |             |
| PLC_PRG.SC_OUTPUTS (89)         |  | Local Write |
| _global_init (82)               |  | Local Write |
| SC_SLOTV211_NOT_SYMBOL%MX7.15   |  |             |
| PLC_PRG.SC_OUTPUTS (93)         |  | Local Write |
| _global_init (86)               |  | Local Write |
| SC_SLOTV211_NOT_SYMBOL%MX7.15   |  |             |
| PLC_PRG.SC_OUTPUTS (93)         |  | Local Write |
| _global_init (86)               |  | Local Write |
| SC_SLOTV211_CLS_REQ%MX642.1     |  |             |
| PLC_PRG.CLEAR_REQS (23)         |  | Local Write |
| PLC_PRG.SC_INPUTS (20)          |  | Local Read  |
| _global_init (146)              |  | Local Write |
| SC_SLOTV211_CLS_REQ%MX642.1     |  |             |
| PLC_PRG.CLEAR_REQS (23)         |  | Local Write |
| PLC_PRG.SC_INPUTS (20)          |  | Local Read  |
| _global_init (146)              |  | Local Write |
| SC_RPV211_OPEN_CMD%MX6.5        |  |             |
| PLC_PRG.SC_OUTPUTS (78)         |  | Local Write |
| _global_init (74)               |  | Local Write |
| SC_SLOTV211_OPEN%MX7.9          |  |             |
| PLC_PRG.SC_OUTPUTS (87)         |  | Local Write |
| _global_init (80)               |  | Local Write |
| SC_SLOTV211_OPEN%MX7.9          |  |             |
| PLC_PRG.SC_OUTPUTS (87)         |  | Local Write |
| _global_init (80)               |  | Local Write |
| SC_SLOTV211_CLOSE_PERMIT%MX7.12 |  |             |
| PLC_PRG.SC_OUTPUTS (90)         |  | Local Write |
| _global_init (83)               |  | Local Write |
| SC_SLOTV211_CLOSED%MX7.10       |  |             |
| PLC_PRG.SC_OUTPUTS (88)         |  | Local Write |
| _global_init (81)               |  | Local Write |
| SC_SLOTV211_CLOSE_CMD%MX7.14    |  |             |
| PLC_PRG.SC_OUTPUTS (92)         |  | Local Write |
| _global_init (85)               |  | Local Write |
| SC_RPV212_OPEN_CMD%MX8.5        |  |             |
| PLC_PRG.SC_OUTPUTS (97)         |  | Local Write |
| _global_init (89)               |  | Local Write |
| SC_RPV212_CLOSED%MX8.2          |  |             |
| PLC_PRG.SC_OUTPUTS (96)         |  | Local Write |
| _global_init (88)               |  | Local Write |
| SC_RPV212_OPEN%MX8.1            |  |             |
| PLC_PRG.SC_OUTPUTS (95)         |  | Local Write |
| _global_init (87)               |  | Local Write |
| SC_RP2111_ON%MX10.0             |  |             |
| PLC_PRG.SC_OUTPUTS (109)        |  | Local Write |
| _global_init (97)               |  | Local Write |
| SC_RPV212_CLOSED%MX8.2          |  |             |
| PLC_PRG.SC_OUTPUTS (96)         |  | Local Write |
| _global_init (88)               |  | Local Write |
| SC_RPV211_OPEN%MX6.1            |  |             |
| PLC_PRG.SC_OUTPUTS (76)         |  | Local Write |
| _global_init (72)               |  | Local Write |
| SC_RPV211_CLOSED%MX6.2          |  |             |
| PLC_PRG.SC_OUTPUTS (77)         |  | Local Write |
| _global_init (73)               |  | Local Write |
| SC_RP2111_ON_CMD%MX10.1         |  |             |
| PLC_PRG.SC_OUTPUTS (110)        |  | Local Write |
| _global_init (98)               |  | Local Write |



|                           |  |             |
|---------------------------|--|-------------|
| SC_RP2111_ON_CMD%MX10.1   |  |             |
| PLC_PRG.SC_OUTPUTS (110)  |  | Local Write |
| _global_init (98)         |  | Local Write |
| SC_RP2111_ON%MX10.0       |  |             |
| PLC_PRG.SC_OUTPUTS (109)  |  | Local Write |
| _global_init (97)         |  | Local Write |
| SC_RP2110_ON_CMD%MX9.9    |  |             |
| PLC_PRG.SC_OUTPUTS (107)  |  | Local Write |
| _global_init (96)         |  | Local Write |
| SC_RP2110_ON_CMD%MX9.9    |  |             |
| PLC_PRG.SC_OUTPUTS (107)  |  | Local Write |
| _global_init (96)         |  | Local Write |
| SC_RP2110_ON%MX9.8        |  |             |
| PLC_PRG.SC_OUTPUTS (106)  |  | Local Write |
| _global_init (95)         |  | Local Write |
| SC_RP2110_ON%MX9.8        |  |             |
| PLC_PRG.SC_OUTPUTS (106)  |  | Local Write |
| _global_init (95)         |  | Local Write |
| SC_RESET_REQ%MX640.0      |  |             |
| PLC_PRG.CLEAR_REQS (3)    |  | Local Write |
| PLC_PRG.SC_INPUTS (2)     |  | Local Read  |
| _global_init (132)        |  | Local Write |
| SC_RESET_REQ%MX640.0      |  |             |
| PLC_PRG.CLEAR_REQS (3)    |  | Local Write |
| PLC_PRG.SC_INPUTS (2)     |  | Local Read  |
| _global_init (132)        |  | Local Write |
| SC_PE212_PSL_LO%MX2.4     |  |             |
| PLC_PRG.SC_OUTPUTS (32)   |  | Local Write |
| _global_init (36)         |  | Local Write |
| SC_PE212_PSL_MIDHI%MX2.2  |  |             |
| PLC_PRG.SC_OUTPUTS (30)   |  | Local Write |
| _global_init (34)         |  | Local Write |
| SC_PE212_PSL_LO%MX2.4     |  |             |
| PLC_PRG.SC_OUTPUTS (32)   |  | Local Write |
| _global_init (36)         |  | Local Write |
| SC_PE212_PSL_MIDHI%MX2.2  |  |             |
| PLC_PRG.SC_OUTPUTS (30)   |  | Local Write |
| _global_init (34)         |  | Local Write |
| SC_PE212_PSL_HI%MX2.1     |  |             |
| PLC_PRG.SC_OUTPUTS (29)   |  | Local Write |
| _global_init (33)         |  | Local Write |
| SC_PE212_LO_PIIY%MW1292   |  |             |
| PLC_PRG.SC_OUTPUTS (168)  |  | Local Write |
| _global_init (157)        |  | Local Write |
| SC_PE212_LO_PIIY%MW1292   |  |             |
| PLC_PRG.SC_OUTPUTS (168)  |  | Local Write |
| _global_init (157)        |  | Local Write |
| SC_PE212_OK%MX2.0         |  |             |
| PLC_PRG.SC_OUTPUTS (28)   |  | Local Write |
| _global_init (32)         |  | Local Write |
| SC_PE212_HI_PIIY%MW1291   |  |             |
| PLC_PRG.SC_OUTPUTS (167)  |  | Local Write |
| _global_init (156)        |  | Local Write |
| SC_PE212_HI_PIIY%MW1291   |  |             |
| PLC_PRG.SC_OUTPUTS (167)  |  | Local Write |
| _global_init (156)        |  | Local Write |
| SC_PE211_PSL_MIDL0%MX1.11 |  |             |
| PLC_PRG.SC_OUTPUTS (25)   |  | Local Write |
| _global_init (30)         |  | Local Write |
| SC_PE211_PSL_MIDL0%MX1.11 |  |             |
| PLC_PRG.SC_OUTPUTS (25)   |  | Local Write |
| _global_init (30)         |  | Local Write |
| SC_PE211_PSL_LO%MX1.12    |  |             |
| PLC_PRG.SC_OUTPUTS (26)   |  | Local Write |
| _global_init (31)         |  | Local Write |
| SC_PE211_OK%MX1.8         |  |             |
| PLC_PRG.SC_OUTPUTS (22)   |  | Local Write |
| _global_init (27)         |  | Local Write |
| SC_PE211_LO_PIIY%MW1290   |  |             |
| PLC_PRG.SC_OUTPUTS (166)  |  | Local Write |
| _global_init (155)        |  | Local Write |
| SC_PE211_LO_PIIY%MW1290   |  |             |
| PLC_PRG.SC_OUTPUTS (166)  |  | Local Write |

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|-----------------------------|-------------|
| _global_init (155)          | Local Write |
| SC_PE2111_PSL%MX0.15        |             |
| PLC_PRG.SC_OUTPUTS (14)     | Local Write |
| _global_init (21)           | Local Write |
| SC_PE211_PSL_HI%MX1.9       |             |
| PLC_PRG.SC_OUTPUTS (23)     | Local Write |
| _global_init (28)           | Local Write |
| SC_PE211_PSL_HI%MX1.9       |             |
| PLC_PRG.SC_OUTPUTS (23)     | Local Write |
| _global_init (28)           | Local Write |
| SC_PE211_HI_PIIY%MW1289     |             |
| PLC_PRG.SC_OUTPUTS (165)    | Local Write |
| _global_init (154)          | Local Write |
| SC_PE203_PSL_MIDLO%MX1.3    |             |
| PLC_PRG.SC_OUTPUTS (19)     | Local Write |
| _global_init (25)           | Local Write |
| SC_PE2110_PSL%MX0.14        |             |
| PLC_PRG.SC_OUTPUTS (13)     | Local Write |
| _global_init (20)           | Local Write |
| SC_PE203_PSL_HI%MX1.1       |             |
| PLC_PRG.SC_OUTPUTS (17)     | Local Write |
| _global_init (23)           | Local Write |
| SC_PE211_HI_PIIY%MW1289     |             |
| PLC_PRG.SC_OUTPUTS (165)    | Local Write |
| _global_init (154)          | Local Write |
| SC_PE203_LO_PIIY%MW1288     |             |
| PLC_PRG.SC_OUTPUTS (164)    | Local Write |
| _global_init (153)          | Local Write |
| SC_PE203_PSL_MIDHI%MX1.2    |             |
| PLC_PRG.SC_OUTPUTS (18)     | Local Write |
| _global_init (24)           | Local Write |
| SC_PE202_PSL%MX0.10         |             |
| PLC_PRG.SC_OUTPUTS (9)      | Local Write |
| _global_init (17)           | Local Write |
| SC_PE203_LO_PIIY%MW1288     |             |
| PLC_PRG.SC_OUTPUTS (164)    | Local Write |
| _global_init (153)          | Local Write |
| SC_PE202_PIIY%MW1286        |             |
| PLC_PRG.SC_OUTPUTS (162)    | Local Write |
| _global_init (151)          | Local Write |
| SC_PE203_PSL_LO%MX1.4       |             |
| PLC_PRG.SC_OUTPUTS (20)     | Local Write |
| _global_init (26)           | Local Write |
| SC_PE203_PSL_LO%MX1.4       |             |
| PLC_PRG.SC_OUTPUTS (20)     | Local Write |
| _global_init (26)           | Local Write |
| SC_PE203_OK%MX1.0           |             |
| PLC_PRG.SC_OUTPUTS (16)     | Local Write |
| _global_init (22)           | Local Write |
| SC_PE202_PIIY%MW1286        |             |
| PLC_PRG.SC_OUTPUTS (162)    | Local Write |
| _global_init (151)          | Local Write |
| SC_PE203_HI_PIIY%MW1287     |             |
| PLC_PRG.SC_OUTPUTS (163)    | Local Write |
| _global_init (152)          | Local Write |
| SC_PE203_HI_PIIY%MW1287     |             |
| PLC_PRG.SC_OUTPUTS (163)    | Local Write |
| _global_init (152)          | Local Write |
| SC_PE201_PIIY%MW1285        |             |
| PLC_PRG.SC_OUTPUTS (161)    | Local Write |
| _global_init (150)          | Local Write |
| SC_PE101_PSL%MX0.8          |             |
| PLC_PRG.SC_OUTPUTS (7)      | Local Write |
| _global_init (15)           | Local Write |
| SC_PE101_PIIY%MW1284        |             |
| PLC_PRG.SC_OUTPUTS (160)    | Local Write |
| _global_init (149)          | Local Write |
| SC_LL_TP212_TURBO_OK%MX13.7 |             |
| PLC_PRG.SC_OUTPUTS (149)    | Local Write |
| _global_init (129)          | Local Write |
| SC_LL_TP211_TURBO_OK%MX13.6 |             |
| PLC_PRG.SC_OUTPUTS (148)    | Local Write |
| _global_init (128)          | Local Write |

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| SC_PE203_PSL_MIDLO%MX1.3    |  |             |
| PLC_PRG.SC_OUTPUTS (19)     |  | Local Write |
| _global_init (25)           |  | Local Write |
| SC_PE201_PSL%MX0.9          |  |             |
| PLC_PRG.SC_OUTPUTS (8)      |  | Local Write |
| _global_init (16)           |  | Local Write |
| SC_LL_V202_OPN%MX12.3       |  |             |
| PLC_PRG.SC_OUTPUTS (136)    |  | Local Write |
| _global_init (117)          |  | Local Write |
| SC_LL_TP212_TURBO_OK%MX13.7 |  |             |
| PLC_PRG.SC_OUTPUTS (149)    |  | Local Write |
| _global_init (129)          |  | Local Write |
| SC_LL_TP211_TURBO_OK%MX13.6 |  |             |
| PLC_PRG.SC_OUTPUTS (148)    |  | Local Write |
| _global_init (128)          |  | Local Write |
| SC_LL_TP201_OK%MX12.7       |  |             |
| PLC_PRG.SC_OUTPUTS (140)    |  | Local Write |
| _global_init (121)          |  | Local Write |
| SC_LL_TP201_OK%MX12.7       |  |             |
| PLC_PRG.SC_OUTPUTS (140)    |  | Local Write |
| _global_init (121)          |  | Local Write |
| SC_LL_RP2111_ON%MX13.4      |  |             |
| PLC_PRG.SC_OUTPUTS (146)    |  | Local Write |
| _global_init (126)          |  | Local Write |
| SC_PE202_PSL%MX0.10         |  |             |
| PLC_PRG.SC_OUTPUTS (9)      |  | Local Write |
| _global_init (17)           |  | Local Write |
| SC_LL_PE212_OK%MX13.3       |  |             |
| PLC_PRG.SC_OUTPUTS (145)    |  | Local Write |
| _global_init (125)          |  | Local Write |
| SC_LL_PE212_OK%MX13.3       |  |             |
| PLC_PRG.SC_OUTPUTS (145)    |  | Local Write |
| _global_init (125)          |  | Local Write |
| SC_LL_PE203_OK%MX12.5       |  |             |
| PLC_PRG.SC_OUTPUTS (138)    |  | Local Write |
| _global_init (119)          |  | Local Write |
| SC_LL_V202_OPN%MX12.3       |  |             |
| PLC_PRG.SC_OUTPUTS (136)    |  | Local Write |
| _global_init (117)          |  | Local Write |
| SC_LL_STATE%MW1306          |  |             |
| PLC_PRG.SC_OUTPUTS (274)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (276)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (278)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (280)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (282)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (284)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (286)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (288)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (290)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (292)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (294)    |  | Local Write |
| PLC_PRG.SC_OUTPUTS (297)    |  | Local Write |
| _global_init (163)          |  | Local Write |
| SC_LL_RP2111_ON%MX13.4      |  |             |
| PLC_PRG.SC_OUTPUTS (146)    |  | Local Write |
| _global_init (126)          |  | Local Write |
| SC_LL_PE211_OK%MX13.2       |  |             |
| PLC_PRG.SC_OUTPUTS (144)    |  | Local Write |
| _global_init (124)          |  | Local Write |
| SC_LL_PE211_OK%MX13.2       |  |             |
| PLC_PRG.SC_OUTPUTS (144)    |  | Local Write |
| _global_init (124)          |  | Local Write |
| SC_LL_PE2111_PSL_LL%MX13.9  |  |             |
| _global_init (131)          |  | Local Write |
| SC_LL_PE2111_PSL_LL%MX13.9  |  |             |
| _global_init (131)          |  | Local Write |
| SC_LL_PE2111_PSL_ES%MX13.8  |  |             |
| _global_init (130)          |  | Local Write |
| SC_LL_PE2111_PSL_ES%MX13.8  |  |             |
| _global_init (130)          |  | Local Write |
| SC_LL_PE2111_PSL%MX13.5     |  |             |
| PLC_PRG.SC_OUTPUTS (147)    |  | Local Write |
| _global_init (127)          |  | Local Write |

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|---------------------------|--|-------------|
| SC_LL_PE2111_PSL%MX13.5   |  |             |
| PLC_PRG.SC_OUTPUTS (147)  |  | Local Write |
| _global_init (127)        |  | Local Write |
| SC_LL_PE202_PSL%MX12.4    |  |             |
| PLC_PRG.SC_OUTPUTS (137)  |  | Local Write |
| _global_init (118)        |  | Local Write |
| SC_LL_PE101_PSL%MX12.1    |  |             |
| PLC_PRG.SC_OUTPUTS (134)  |  | Local Write |
| _global_init (115)        |  | Local Write |
| SC_PE201_PSL%MX0.9        |  |             |
| PLC_PRG.SC_OUTPUTS (8)    |  | Local Write |
| _global_init (16)         |  | Local Write |
| SC_PE201_PIIY%MW1285      |  |             |
| PLC_PRG.SC_OUTPUTS (161)  |  | Local Write |
| _global_init (150)        |  | Local Write |
| SC_PE101_PIIY%MW1284      |  |             |
| PLC_PRG.SC_OUTPUTS (160)  |  | Local Write |
| _global_init (149)        |  | Local Write |
| SC_LL_STATE%MW1306        |  |             |
| PLC_PRG.SC_OUTPUTS (274)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (276)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (278)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (280)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (282)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (284)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (286)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (288)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (290)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (292)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (294)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (297)  |  | Local Write |
| _global_init (163)        |  | Local Write |
| SC_LL_PE203_PSL_LO%MX12.6 |  |             |
| PLC_PRG.SC_OUTPUTS (139)  |  | Local Write |
| _global_init (120)        |  | Local Write |
| SC_LL_PE203_PSL_LO%MX12.6 |  |             |
| PLC_PRG.SC_OUTPUTS (139)  |  | Local Write |
| _global_init (120)        |  | Local Write |
| SC_LL_PE203_OK%MX12.5     |  |             |
| PLC_PRG.SC_OUTPUTS (138)  |  | Local Write |
| _global_init (119)        |  | Local Write |
| SC_LL_PE202_PSL%MX12.4    |  |             |
| PLC_PRG.SC_OUTPUTS (137)  |  | Local Write |
| _global_init (118)        |  | Local Write |
| SC_LL_PE101_PSL%MX12.1    |  |             |
| PLC_PRG.SC_OUTPUTS (134)  |  | Local Write |
| _global_init (115)        |  | Local Write |
| SC_LL_PE201_PSL%MX12.2    |  |             |
| PLC_PRG.SC_OUTPUTS (135)  |  | Local Write |
| _global_init (116)        |  | Local Write |
| SC_LL_PE201_PSL%MX12.2    |  |             |
| PLC_PRG.SC_OUTPUTS (135)  |  | Local Write |
| _global_init (116)        |  | Local Write |
| SC_LL_LL_CONFIG_OK%MX13.1 |  |             |
| PLC_PRG.SC_OUTPUTS (143)  |  | Local Write |
| _global_init (123)        |  | Local Write |
| SC_LL_LL_CONFIG_OK%MX13.1 |  |             |
| PLC_PRG.SC_OUTPUTS (143)  |  | Local Write |
| _global_init (123)        |  | Local Write |
| SC_LL_ES_CONFIG_OK%MX13.0 |  |             |
| PLC_PRG.SC_OUTPUTS (142)  |  | Local Write |
| _global_init (122)        |  | Local Write |
| SC_LL_ES_CONFIG_OK%MX13.0 |  |             |
| PLC_PRG.SC_OUTPUTS (142)  |  | Local Write |
| _global_init (122)        |  | Local Write |
| SC_LL_CMD_VAL%MW1298      |  |             |
| PLC_PRG.SC_OUTPUTS (205)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (207)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (209)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (211)  |  | Local Write |
| PLC_PRG.SC_OUTPUTS (214)  |  | Local Write |
| _global_init (160)        |  | Local Write |
| SC_LL_CMD_VAL%MW1298      |  |             |

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|----------------------------|-------------|
| PLC_PRG.SC_OUTPUTS (205)   | Local Write |
| PLC_PRG.SC_OUTPUTS (207)   | Local Write |
| PLC_PRG.SC_OUTPUTS (209)   | Local Write |
| PLC_PRG.SC_OUTPUTS (211)   | Local Write |
| PLC_PRG.SC_OUTPUTS (214)   | Local Write |
| _global_init (160)         | Local Write |
| SC_LL_CMD_REQ%MW3714       |             |
| PLC_PRG.SC_INPUTS (55)     | Local Read  |
| PLC_PRG.SC_INPUTS (57)     | Local Read  |
| PLC_PRG.SC_INPUTS (59)     | Local Read  |
| PLC_PRG.SC_INPUTS (61)     | Local Read  |
| _global_init (166)         | Local Write |
| SC_LL_ACTUATOR_OK%MX12.0   |             |
| PLC_PRG.SC_OUTPUTS (133)   | Local Write |
| _global_init (114)         | Local Write |
| SC_LL_CMD_REQ%MW3714       |             |
| PLC_PRG.SC_INPUTS (55)     | Local Read  |
| PLC_PRG.SC_INPUTS (57)     | Local Read  |
| PLC_PRG.SC_INPUTS (59)     | Local Read  |
| PLC_PRG.SC_INPUTS (61)     | Local Read  |
| _global_init (166)         | Local Write |
| SC_LL211_LID_CLOSED%MX2.8  |             |
| PLC_PRG.SC_OUTPUTS (34)    | Local Write |
| _global_init (37)          | Local Write |
| SC_ES_STATE%MW1305         |             |
| PLC_PRG.SC_OUTPUTS (245)   | Local Write |
| PLC_PRG.SC_OUTPUTS (247)   | Local Write |
| PLC_PRG.SC_OUTPUTS (249)   | Local Write |
| PLC_PRG.SC_OUTPUTS (251)   | Local Write |
| PLC_PRG.SC_OUTPUTS (253)   | Local Write |
| PLC_PRG.SC_OUTPUTS (255)   | Local Write |
| PLC_PRG.SC_OUTPUTS (257)   | Local Write |
| PLC_PRG.SC_OUTPUTS (259)   | Local Write |
| PLC_PRG.SC_OUTPUTS (261)   | Local Write |
| PLC_PRG.SC_OUTPUTS (263)   | Local Write |
| PLC_PRG.SC_OUTPUTS (265)   | Local Write |
| PLC_PRG.SC_OUTPUTS (268)   | Local Write |
| _global_init (162)         | Local Write |
| SC_ES_CMD_REQ%MW3713       |             |
| PLC_PRG.SC_INPUTS (40)     | Local Read  |
| PLC_PRG.SC_INPUTS (42)     | Local Read  |
| PLC_PRG.SC_INPUTS (44)     | Local Read  |
| PLC_PRG.SC_INPUTS (46)     | Local Read  |
| _global_init (165)         | Local Write |
| RPV212_OPN_REQ_LL          |             |
| PLC_PRG.LL_SM (12)         | Local Write |
| PLC_PRG.LL_SM (25)         | Local Write |
| PLC_PRG.LL_SM (38)         | Local Write |
| PLC_PRG.LL_SM (55)         | Local Write |
| PLC_PRG.LL_SM (72)         | Local Write |
| PLC_PRG.LL_SM (89)         | Local Write |
| PLC_PRG.LL_SM (106)        | Local Write |
| PLC_PRG.LL_SM (124)        | Local Write |
| PLC_PRG.LL_SM (141)        | Local Write |
| PLC_PRG.LL_SM (161)        | Local Write |
| PLC_PRG.LL_SM (180)        | Local Write |
| PLC_PRG.VALVES (105)       | Local Read  |
| PLC_PRG.VALVES (106)       | Local Read  |
| _global_init (274)         | Local Write |
| RPV212_CSD                 |             |
| PLC_PRG.LL_SM (32)         | Local Read  |
| PLC_PRG.PROCESS_IN... (68) | Local Write |
| PLC_PRG.PUMPS (8)          | Local Read  |
| PLC_PRG.SC_OUTPUTS (96)    | Local Read  |
| PLC_PRG.VALVES (71)        | Local Read  |
| PLC_PRG.VALVES (86)        | Local Read  |
| PLC_PRG.VALVES (94)        | Local Read  |
| _global_init (214)         | Local Write |
| RPV212_CLS_REQ_LL          |             |
| _global_init (275)         | Local Write |
| SC_LL_ACTUATOR_OK%MX12.0   |             |
| PLC_PRG.SC_OUTPUTS (133)   | Local Write |
| _global_init (114)         | Local Write |

|                              |  |              |
|------------------------------|--|--------------|
| RPV211_CSD                   |  |              |
| PLC_PRG.ES_SM (33)           |  | Local Read   |
| PLC_PRG.PROCESS_IN... (56)   |  | Local Write  |
| PLC_PRG.PUMPS (8)            |  | Local Read   |
| PLC_PRG.SC_OUTPUTS (77)      |  | Local Read   |
| PLC_PRG.VALVES (54)          |  | Local Read   |
| PLC_PRG.VALVES (62)          |  | Local Read   |
| PLC_PRG.VALVES (103)         |  | Local Read   |
| _global_init (206)           |  | Local Write  |
| SC_LL211_ARM_RETRACTED%MX2.9 |  |              |
| PLC_PRG.SC_OUTPUTS (35)      |  | Local Write  |
| _global_init (38)            |  | Local Write  |
| SC_LL211_ARM_RETRACTED%MX2.9 |  |              |
| PLC_PRG.SC_OUTPUTS (35)      |  | Local Write  |
| _global_init (38)            |  | Local Write  |
| SC_ES_CMD_VAL%MW1297         |  |              |
| PLC_PRG.SC_OUTPUTS (190)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (192)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (194)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (196)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (199)     |  | Local Write  |
| _global_init (159)           |  | Local Write  |
| RP211_PSL                    |  |              |
| PLC_PRG.PROCESS_IN... (9)    |  | Local Write  |
| _global_init (189)           |  | Local Write  |
| Reset_Required               |  |              |
| PLC_PRG.FAULT_LOGIC (37)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (2)       |  | Local Read   |
| _global_init (245)           |  | Local Write  |
| SC_ES_STATE%MW1305           |  |              |
| PLC_PRG.SC_OUTPUTS (245)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (247)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (249)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (251)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (253)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (255)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (257)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (259)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (261)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (263)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (265)     |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (268)     |  | Local Write  |
| _global_init (162)           |  | Local Write  |
| rVersion                     |  |              |
| _global_init (165)           |  | Global Write |
| RPV212                       |  |              |
| PLC_PRG.PROCESS_OU... (23)   |  | Local Read   |
| PLC_PRG.SC_OUTPUTS (97)      |  | Local Read   |
| PLC_PRG.VALVES (102)         |  | Local Write  |
| PLC_PRG.VALVES (103)         |  | Local Write  |
| PLC_PRG.VALVES (104)         |  | Local Write  |
| PLC_PRG.VALVES (105)         |  | Local Write  |
| PLC_PRG.VALVES (106)         |  | Local Write  |
| PLC_PRG.VALVES (107)         |  | Local Read   |
| _global_init (306)           |  | Local Read   |
| PE212_PSL_MIDLO              |  |              |
| PLC_PRG.LL_SM (47)           |  | Local Read   |
| PLC_PRG.LL_SM (135)          |  | Local Read   |
| PLC_PRG.LL_SM (152)          |  | Local Read   |
| PLC_PRG.LL_SM (172)          |  | Local Read   |
| PLC_PRG.LL_SM (191)          |  | Local Read   |
| PLC_PRG.PROCESS_IN... (27)   |  | Local Write  |
| PLC_PRG.VALVES (103)         |  | Local Read   |
| PLC_PRG.VALVES (110)         |  | Local Read   |
| _global_init (187)           |  | Local Write  |
| SC_LL211_LID_CLOSED%MX2.8    |  |              |
| PLC_PRG.SC_OUTPUTS (34)      |  | Local Write  |
| _global_init (37)            |  | Local Write  |
| PE212_PSH_MIDHI              |  |              |
| PLC_PRG.LL_SM (66)           |  | Local Read   |
| PLC_PRG.PROCESS_IN... (26)   |  | Local Write  |
| _global_init (186)           |  | Local Write  |
| SC_ES_CMD_VAL%MW1297         |  |              |

|                            |             |
|----------------------------|-------------|
| PLC_PRG.SC_OUTPUTS (190)   | Local Write |
| PLC_PRG.SC_OUTPUTS (192)   | Local Write |
| PLC_PRG.SC_OUTPUTS (194)   | Local Write |
| PLC_PRG.SC_OUTPUTS (196)   | Local Write |
| PLC_PRG.SC_OUTPUTS (199)   | Local Write |
| _global_init (159)         | Local Write |
| RPV212_OPN                 |             |
| PLC_PRG.PROCESS_IN... (67) | Local Write |
| PLC_PRG.SC_OUTPUTS (95)    | Local Read  |
| _global_init (213)         | Local Write |
| RPV211_CLS_REQ_ES          |             |
| _global_init (263)         | Local Write |
| RPV211                     |             |
| PLC_PRG.PROCESS_OU... (14) | Local Read  |
| PLC_PRG.SC_OUTPUTS (78)    | Local Read  |
| PLC_PRG.VALVES (70)        | Local Write |
| PLC_PRG.VALVES (71)        | Local Write |
| PLC_PRG.VALVES (72)        | Local Write |
| PLC_PRG.VALVES (73)        | Local Write |
| PLC_PRG.VALVES (74)        | Local Write |
| PLC_PRG.VALVES (75)        | Local Read  |
| _global_init (301)         | Local Read  |
| PE212_PSH_HI               |             |
| PLC_PRG.LL_SM (83)         | Local Read  |
| PLC_PRG.LL_SM (100)        | Local Read  |
| PLC_PRG.PROCESS_IN... (25) | Local Write |
| _global_init (185)         | Local Write |
| PE211_PSL_MIDLO            |             |
| PLC_PRG.ES_SM (49)         | Local Read  |
| PLC_PRG.ES_SM (142)        | Local Read  |
| PLC_PRG.ES_SM (160)        | Local Read  |
| PLC_PRG.ES_SM (181)        | Local Read  |
| PLC_PRG.ES_SM (201)        | Local Read  |
| PLC_PRG.PROCESS_IN... (21) | Local Write |
| PLC_PRG.VALVES (71)        | Local Read  |
| PLC_PRG.VALVES (78)        | Local Read  |
| _global_init (182)         | Local Write |
| PE211_PSL_LO               |             |
| PLC_PRG.ES_SM (183)        | Local Read  |
| PLC_PRG.ES_SM (204)        | Local Read  |
| PLC_PRG.PROCESS_IN... (22) | Local Write |
| PLC_PRG.VALVES (36)        | Local Read  |
| _global_init (183)         | Local Write |
| SC_ES_CMD_REQ%MW3713       |             |
| PLC_PRG.SC_INPUTS (40)     | Local Read  |
| PLC_PRG.SC_INPUTS (42)     | Local Read  |
| PLC_PRG.SC_INPUTS (44)     | Local Read  |
| PLC_PRG.SC_INPUTS (46)     | Local Read  |
| _global_init (165)         | Local Write |
| PE211_PSH_MIDHI            |             |
| PLC_PRG.ES_SM (69)         | Local Read  |
| PLC_PRG.PROCESS_IN... (20) | Local Write |
| _global_init (181)         | Local Write |
| SC_BR_STATE%MW1304         |             |
| PLC_PRG.SC_OUTPUTS (221)   | Local Write |
| PLC_PRG.SC_OUTPUTS (224)   | Local Write |
| PLC_PRG.SC_OUTPUTS (227)   | Local Write |
| PLC_PRG.SC_OUTPUTS (230)   | Local Write |
| PLC_PRG.SC_OUTPUTS (233)   | Local Write |
| PLC_PRG.SC_OUTPUTS (236)   | Local Write |
| PLC_PRG.SC_OUTPUTS (239)   | Local Write |
| _global_init (161)         | Local Write |
| SC_BR_STATE%MW1304         |             |
| PLC_PRG.SC_OUTPUTS (221)   | Local Write |
| PLC_PRG.SC_OUTPUTS (224)   | Local Write |
| PLC_PRG.SC_OUTPUTS (227)   | Local Write |
| PLC_PRG.SC_OUTPUTS (230)   | Local Write |
| PLC_PRG.SC_OUTPUTS (233)   | Local Write |
| PLC_PRG.SC_OUTPUTS (236)   | Local Write |
| PLC_PRG.SC_OUTPUTS (239)   | Local Write |
| _global_init (161)         | Local Write |
| SC_BR_CMD_VAL%MW1296       |             |
| PLC_PRG.SC_OUTPUTS (173)   | Local Write |

|                            |             |
|----------------------------|-------------|
| PLC_PRG.SC_OUTPUTS (175)   | Local Write |
| PLC_PRG.SC_OUTPUTS (177)   | Local Write |
| PLC_PRG.SC_OUTPUTS (179)   | Local Write |
| PLC_PRG.SC_OUTPUTS (181)   | Local Write |
| PLC_PRG.SC_OUTPUTS (184)   | Local Write |
| _global_init (158)         | Local Write |
| SC_BR_CMD_REQ%MW3712       |             |
| PLC_PRG.SC_INPUTS (24)     | Local Read  |
| PLC_PRG.SC_INPUTS (26)     | Local Read  |
| PLC_PRG.SC_INPUTS (28)     | Local Read  |
| PLC_PRG.SC_INPUTS (30)     | Local Read  |
| PLC_PRG.SC_INPUTS (32)     | Local Read  |
| _global_init (164)         | Local Write |
| SC_AFB%MX0.3               |             |
| PLC_PRG.SC_OUTPUTS (4)     | Local Write |
| _global_init (14)          | Local Write |
| SC_ATB%MX0.2               |             |
| PLC_PRG.SC_OUTPUTS (3)     | Local Write |
| _global_init (13)          | Local Write |
| RPV211_OPN_REQ_ES          |             |
| PLC_PRG.ES_SM (12)         | Local Write |
| PLC_PRG.ES_SM (26)         | Local Write |
| PLC_PRG.ES_SM (40)         | Local Write |
| PLC_PRG.ES_SM (58)         | Local Write |
| PLC_PRG.ES_SM (76)         | Local Write |
| PLC_PRG.ES_SM (94)         | Local Write |
| PLC_PRG.ES_SM (112)        | Local Write |
| PLC_PRG.ES_SM (131)        | Local Write |
| PLC_PRG.ES_SM (149)        | Local Write |
| PLC_PRG.ES_SM (170)        | Local Write |
| PLC_PRG.ES_SM (190)        | Local Write |
| PLC_PRG.VALVES (73)        | Local Read  |
| PLC_PRG.VALVES (74)        | Local Read  |
| _global_init (262)         | Local Write |
| RP211_ON_REQ_LL            |             |
| PLC_PRG.LL_SM (13)         | Local Write |
| PLC_PRG.LL_SM (26)         | Local Write |
| PLC_PRG.LL_SM (39)         | Local Write |
| PLC_PRG.LL_SM (56)         | Local Write |
| PLC_PRG.LL_SM (73)         | Local Write |
| PLC_PRG.LL_SM (90)         | Local Write |
| PLC_PRG.LL_SM (107)        | Local Write |
| PLC_PRG.LL_SM (125)        | Local Write |
| PLC_PRG.LL_SM (142)        | Local Write |
| PLC_PRG.LL_SM (162)        | Local Write |
| PLC_PRG.LL_SM (181)        | Local Write |
| PLC_PRG.PUMPS (9)          | Local Read  |
| _global_init (283)         | Local Write |
| RP211_ON                   |             |
| PLC_PRG.ES_SM (123)        | Local Read  |
| PLC_PRG.LL_SM (117)        | Local Read  |
| PLC_PRG.PROCESS_IN... (7)  | Local Write |
| PLC_PRG.SC_OUTPUTS (106)   | Local Read  |
| PLC_PRG.VALVES (70)        | Local Read  |
| PLC_PRG.VALVES (102)       | Local Read  |
| _global_init (224)         | Local Write |
| RP211                      |             |
| PLC_PRG.PROCESS_OU... (3)  | Local Read  |
| PLC_PRG.PUMPS (7)          | Local Write |
| PLC_PRG.PUMPS (8)          | Local Write |
| PLC_PRG.PUMPS (9)          | Local Write |
| PLC_PRG.PUMPS (10)         | Local Read  |
| PLC_PRG.PUMPS (10)         | Local Write |
| PLC_PRG.PUMPS (11)         | Local Read  |
| PLC_PRG.SC_OUTPUTS (107)   | Local Read  |
| _global_init (309)         | Local Read  |
| PE212_PSL_LO               |             |
| PLC_PRG.LL_SM (174)        | Local Read  |
| PLC_PRG.LL_SM (194)        | Local Read  |
| PLC_PRG.PROCESS_IN... (28) | Local Write |
| _global_init (188)         | Local Write |
| PE212_PIY_OK               |             |
| PLC_PRG.FAULT_LOGIC (15)   | Local Read  |



|                            |             |
|----------------------------|-------------|
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (24) | Local Write |
| _global_init (184)         | Local Write |
| PE211_PSH_HI               |             |
| PLC_PRG.ES_SM (87)         | Local Read  |
| PLC_PRG.ES_SM (105)        | Local Read  |
| PLC_PRG.PROCESS_IN... (19) | Local Write |
| _global_init (180)         | Local Write |
| PE211_PII_OK               |             |
| PLC_PRG.FAULT_LOGIC (14)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (18) | Local Write |
| _global_init (179)         | Local Write |
| PE203_PSL_MIDLO            |             |
| PLC_PRG.PROCESS_IN... (15) | Local Write |
| _global_init (177)         | Local Write |
| PE203_PSL_LO               |             |
| PLC_PRG.FAULT_LOGIC (8)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (16) | Local Write |
| _global_init (178)         | Local Write |
| PE203_PSH_HI               |             |
| PLC_PRG.PROCESS_IN... (13) | Local Write |
| _global_init (175)         | Local Write |
| SC_BR_CMD_VAL%MW1296       |             |
| PLC_PRG.SC_OUTPUTS (173)   | Local Write |
| PLC_PRG.SC_OUTPUTS (175)   | Local Write |
| PLC_PRG.SC_OUTPUTS (177)   | Local Write |
| PLC_PRG.SC_OUTPUTS (179)   | Local Write |
| PLC_PRG.SC_OUTPUTS (181)   | Local Write |
| PLC_PRG.SC_OUTPUTS (184)   | Local Write |
| _global_init (158)         | Local Write |
| PE203_PII_OK               |             |
| PLC_PRG.FAULT_LOGIC (13)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (12) | Local Write |
| _global_init (174)         | Local Write |
| SC_BR_CMD_REQ%MW3712       |             |
| PLC_PRG.SC_INPUTS (24)     | Local Read  |
| PLC_PRG.SC_INPUTS (26)     | Local Read  |
| PLC_PRG.SC_INPUTS (28)     | Local Read  |
| PLC_PRG.SC_INPUTS (30)     | Local Read  |
| PLC_PRG.SC_INPUTS (32)     | Local Read  |
| _global_init (164)         | Local Write |
| RPV211_OPN                 |             |
| PLC_PRG.PROCESS_IN... (55) | Local Write |
| PLC_PRG.SC_OUTPUTS (76)    | Local Read  |
| _global_init (205)         | Local Write |
| PE202_PSL_LO               |             |
| PLC_PRG.FAULT_LOGIC (7)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
| PLC_PRG.PROCESS_IN... (5)  | Local Write |
| PLC_PRG.SC_OUTPUTS (9)     | Local Read  |
| _global_init (173)         | Local Write |
| RESET_REQ                  |             |
| PLC_PRG.FAULT_LOGIC (3)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (4)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (5)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (6)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (7)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (8)    | Local Read  |
| PLC_PRG.FAULT_LOGIC (10)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (11)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (13)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (14)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (15)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (17)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (19)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (20)   | Local Read  |
| PLC_PRG.FAULT_LOGIC (21)   | Local Read  |
| PLC_PRG.SC_INPUTS (2)      | Local Write |
| _global_init (170)         | Local Write |
| PE201_PSL_LO               |             |

|                 |                            |             |
|-----------------|----------------------------|-------------|
|                 | PLC_PRG.FAULT_LOGIC (5)    | Local Read  |
|                 | PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
|                 | PLC_PRG.PROCESS_IN... (4)  | Local Write |
|                 | PLC_PRG.SC_OUTPUTS (8)     | Local Read  |
|                 | _global_init (172)         | Local Write |
| PE101_PSL_LO    |                            |             |
|                 | PLC_PRG.FAULT_LOGIC (4)    | Local Read  |
|                 | PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
|                 | PLC_PRG.PROCESS_IN... (3)  | Local Write |
|                 | PLC_PRG.SC_OUTPUTS (7)     | Local Read  |
|                 | _global_init (171)         | Local Write |
| SC_AFB%MX0.3    |                            |             |
|                 | PLC_PRG.SC_OUTPUTS (4)     | Local Write |
|                 | _global_init (14)          | Local Write |
| RP211_ON_REQ_ES |                            |             |
|                 | PLC_PRG.ES_SM (13)         | Local Write |
|                 | PLC_PRG.ES_SM (27)         | Local Write |
|                 | PLC_PRG.ES_SM (41)         | Local Write |
|                 | PLC_PRG.ES_SM (59)         | Local Write |
|                 | PLC_PRG.ES_SM (77)         | Local Write |
|                 | PLC_PRG.ES_SM (95)         | Local Write |
|                 | PLC_PRG.ES_SM (113)        | Local Write |
|                 | PLC_PRG.ES_SM (132)        | Local Write |
|                 | PLC_PRG.ES_SM (150)        | Local Write |
|                 | PLC_PRG.ES_SM (171)        | Local Write |
|                 | PLC_PRG.ES_SM (191)        | Local Write |
|                 | PLC_PRG.PUMPS (9)          | Local Read  |
|                 | _global_init (282)         | Local Write |
| PE203_PSH_MIDHI |                            |             |
|                 | PLC_PRG.PROCESS_IN... (14) | Local Write |
|                 | _global_init (176)         | Local Write |
| open_req        |                            |             |
|                 | PLC_PRG.VALVES (49)        | Local Write |
|                 | VALVE_BI_FB (4)            | Local Read  |
|                 | VALVE_BI_FB (8)            | Local Read  |
|                 | VALVE_BI_FBinit (5)        | Local Write |
| open_ena        |                            |             |
|                 | PLC_PRG.SC_OUTPUTS (43)    | Local Read  |
|                 | PLC_PRG.SC_OUTPUTS (51)    | Local Read  |
|                 | PLC_PRG.SC_OUTPUTS (63)    | Local Read  |
|                 | PLC_PRG.SC_OUTPUTS (71)    | Local Read  |
|                 | PLC_PRG.VALVES (5)         | Local Write |
|                 | PLC_PRG.VALVES (13)        | Local Write |
|                 | PLC_PRG.VALVES (21)        | Local Write |
|                 | PLC_PRG.VALVES (29)        | Local Write |
|                 | PLC_PRG.VALVES (37)        | Local Write |
|                 | PLC_PRG.VALVES (55)        | Local Write |
|                 | PLC_PRG.VALVES (63)        | Local Write |
|                 | PLC_PRG.VALVES (71)        | Local Write |
|                 | PLC_PRG.VALVES (79)        | Local Write |
|                 | PLC_PRG.VALVES (87)        | Local Write |
|                 | PLC_PRG.VALVES (95)        | Local Write |
|                 | PLC_PRG.VALVES (103)       | Local Write |
|                 | PLC_PRG.VALVES (111)       | Local Write |
|                 | VALVE_FB (3)               | Local Read  |
|                 | VALVE_FB (6)               | Local Read  |
|                 | VALVE_FBinit (2)           | Local Write |
| open_ena        |                            |             |
|                 | PLC_PRG.SC_OUTPUTS (89)    | Local Read  |
|                 | PLC_PRG.VALVES (46)        | Local Write |
|                 | VALVE_BI_FB (4)            | Local Read  |
|                 | VALVE_BI_FB (8)            | Local Read  |
|                 | VALVE_BI_FB (11)           | Local Read  |
|                 | VALVE_BI_FBinit (2)        | Local Write |
| open_cmd        |                            |             |
|                 | PLC_PRG.PROCESS_OU... (5)  | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (6)  | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (7)  | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (8)  | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (10) | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (13) | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (14) | Local Read  |
|                 | PLC_PRG.PROCESS_OU... (15) | Local Read  |

|                       |       |       |       |
|-----------------------|-------|-------|-------|
| PLC_PRG.PROCESS_OU... | (16)  | Local | Read  |
| PLC_PRG.PROCESS_OU... | (22)  | Local | Read  |
| PLC_PRG.PROCESS_OU... | (23)  | Local | Read  |
| PLC_PRG.PROCESS_OU... | (24)  | Local | Read  |
| PLC_PRG.PROCESS_OU... | (25)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (45)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (53)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (65)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (73)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (78)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (80)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (81)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (85)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (97)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (99)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (100) | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (104) | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (112) | Local | Read  |
| VALVE_FB              | (3)   | Local | Read  |
| VALVE_FB              | (3)   | Local | Write |
| VALVE_FB              | (6)   | Local | Read  |
| VALVE_FBinit          | (6)   | Local | Write |
| on_req                |       |       |       |
| PLC_PRG.PUMPS         | (17)  | Local | Write |
| PLC_PRG.PUMPS         | (25)  | Local | Write |
| PLC_PRG.PUMPS         | (26)  | Local | Read  |
| PLC_PRG.PUMPS         | (33)  | Local | Write |
| PLC_PRG.PUMPS         | (34)  | Local | Read  |
| TP_FB                 | (3)   | Local | Read  |
| TP_FBinit             | (4)   | Local | Write |
| on_req                |       |       |       |
| PLC_PRG.PUMPS         | (9)   | Local | Write |
| PLC_PRG.PUMPS         | (10)  | Local | Read  |
| RP_FB                 | (2)   | Local | Read  |
| RP_FBinit             | (3)   | Local | Write |
| open_cmd              |       |       |       |
| PLC_PRG.PROCESS_OU... | (18)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (91)  | Local | Read  |
| VALVE_BI_FB           | (4)   | Local | Read  |
| VALVE_BI_FB           | (4)   | Local | Write |
| VALVE_BI_FB           | (11)  | Local | Read  |
| VALVE_BI_FBinit       | (7)   | Local | Write |
| on_intlk              |       |       |       |
| PLC_PRG.PUMPS         | (14)  | Local | Write |
| PLC_PRG.PUMPS         | (22)  | Local | Write |
| PLC_PRG.PUMPS         | (30)  | Local | Write |
| TP_FB                 | (3)   | Local | Read  |
| TP_FB                 | (6)   | Local | Read  |
| TP_FBinit             | (1)   | Local | Write |
| LL_TP201_OK           |       |       |       |
| PLC_PRG.FAULT_LOGIC   | (19)  | Local | Read  |
| PLC_PRG.FAULT_LOGIC   | (19)  | Local | Write |
| PLC_PRG.FAULT_LOGIC   | (37)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (140) | Local | Read  |
| PLC_PRG.VALVES        | (20)  | Local | Read  |
| PLC_PRG.VALVES        | (36)  | Local | Read  |
| _global_init          | (237) | Local | Write |
| LL_PE212_PIIY_OK      |       |       |       |
| PLC_PRG.FAULT_LOGIC   | (15)  | Local | Read  |
| PLC_PRG.FAULT_LOGIC   | (15)  | Local | Write |
| PLC_PRG.FAULT_LOGIC   | (37)  | Local | Read  |
| PLC_PRG.LL_SM         | (4)   | Local | Read  |
| PLC_PRG.LL_SM         | (19)  | Local | Read  |
| PLC_PRG.SC_OUTPUTS    | (145) | Local | Read  |
| PLC_PRG.VALVES        | (110) | Local | Read  |
| _global_init          | (241) | Local | Write |
| on_ena                |       |       |       |
| PLC_PRG.PUMPS         | (15)  | Local | Write |
| PLC_PRG.PUMPS         | (23)  | Local | Write |
| PLC_PRG.PUMPS         | (31)  | Local | Write |
| PLC_PRG.SC_OUTPUTS    | (118) | Local | Read  |
| TP_FB                 | (3)   | Local | Read  |
| TP_FB                 | (6)   | Local | Read  |

|                            |              |
|----------------------------|--------------|
| TP_FBinit (2)              | Local Write  |
| LL_PE203_PSL_LO            |              |
| PLC_PRG.FAULT_LOGIC (8)    | Local Read   |
| PLC_PRG.FAULT_LOGIC (8)    | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (139)   | Local Read   |
| PLC_PRG.VALVES (20)        | Local Read   |
| PLC_PRG.VALVES (36)        | Local Read   |
| _global_init (236)         | Local Write  |
| on_ena                     |              |
| PLC_PRG.PUMPS (7)          | Local Write  |
| RP_FB (2)                  | Local Read   |
| RP_FB (4)                  | Local Read   |
| RP_FBinit (1)              | Local Write  |
| LLV211_OPN_REQ_SC          |              |
| PLC_PRG.SC_INPUTS (19)     | Local Write  |
| PLC_PRG.VALVES (49)        | Local Read   |
| _global_init (266)         | Local Write  |
| LLV211_CLS_REQ_LL          |              |
| PLC_PRG.LL_SM (11)         | Local Write  |
| PLC_PRG.LL_SM (24)         | Local Write  |
| PLC_PRG.LL_SM (37)         | Local Write  |
| PLC_PRG.LL_SM (54)         | Local Write  |
| PLC_PRG.LL_SM (71)         | Local Write  |
| PLC_PRG.LL_SM (88)         | Local Write  |
| PLC_PRG.LL_SM (123)        | Local Write  |
| PLC_PRG.LL_SM (140)        | Local Write  |
| PLC_PRG.LL_SM (160)        | Local Write  |
| PLC_PRG.LL_SM (179)        | Local Write  |
| PLC_PRG.VALVES (50)        | Local Read   |
| _global_init (269)         | Local Write  |
| LLV211                     |              |
| PLC_PRG.PROCESS_OU... (18) | Local Read   |
| PLC_PRG.PROCESS_OU... (19) | Local Read   |
| PLC_PRG.SC_OUTPUTS (89)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (90)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (91)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (92)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (93)    | Local Read   |
| PLC_PRG.VALVES (45)        | Local Write  |
| PLC_PRG.VALVES (46)        | Local Write  |
| PLC_PRG.VALVES (47)        | Local Write  |
| PLC_PRG.VALVES (48)        | Local Write  |
| PLC_PRG.VALVES (49)        | Local Write  |
| PLC_PRG.VALVES (50)        | Local Write  |
| PLC_PRG.VALVES (51)        | Local Read   |
| _global_init (303)         | Local Read   |
| DO_VENT212_SLOW_CMD%QX1.3  |              |
| PLC_PRG.PROCESS_IN... (64) | Global Read  |
| PLC_PRG.PROCESS_OU... (24) | Global Write |
| _global_init (24)          | Global Write |
| DO_VENT212_FAST_CMD%QX1.4  |              |
| PLC_PRG.PROCESS_IN... (64) | Global Read  |
| PLC_PRG.PROCESS_OU... (25) | Global Write |
| _global_init (25)          | Global Write |
| LLV211_CLS_REQ_SC          |              |
| PLC_PRG.SC_INPUTS (20)     | Local Write  |
| PLC_PRG.VALVES (50)        | Local Read   |
| _global_init (267)         | Local Write  |
| DO_V203_OPEN_CMD%QX0.4     |              |
| PLC_PRG.PROCESS_IN... (42) | Global Read  |
| PLC_PRG.PROCESS_IN... (43) | Global Read  |
| PLC_PRG.PROCESS_OU... (7)  | Global Write |
| _global_init (9)           | Global Write |
| LL_STATE                   |              |
| PLC_PRG.LL_SM (5)          | Local Write  |
| PLC_PRG.LL_SM (10)         | Local Read   |
| PLC_PRG.LL_SM (20)         | Local Write  |
| PLC_PRG.LL_SM (23)         | Local Read   |
| PLC_PRG.LL_SM (33)         | Local Write  |
| PLC_PRG.LL_SM (36)         | Local Read   |
| PLC_PRG.LL_SM (46)         | Local Write  |
| PLC_PRG.LL_SM (48)         | Local Write  |

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| PLC_PRG.LL_SM (50)         | Local Write  |
| PLC_PRG.LL_SM (53)         | Local Read   |
| PLC_PRG.LL_SM (63)         | Local Write  |
| PLC_PRG.LL_SM (65)         | Local Write  |
| PLC_PRG.LL_SM (67)         | Local Write  |
| PLC_PRG.LL_SM (70)         | Local Read   |
| PLC_PRG.LL_SM (80)         | Local Write  |
| PLC_PRG.LL_SM (82)         | Local Write  |
| PLC_PRG.LL_SM (84)         | Local Write  |
| PLC_PRG.LL_SM (87)         | Local Read   |
| PLC_PRG.LL_SM (97)         | Local Write  |
| PLC_PRG.LL_SM (99)         | Local Write  |
| PLC_PRG.LL_SM (101)        | Local Write  |
| PLC_PRG.LL_SM (104)        | Local Read   |
| PLC_PRG.LL_SM (114)        | Local Write  |
| PLC_PRG.LL_SM (116)        | Local Write  |
| PLC_PRG.LL_SM (119)        | Local Write  |
| PLC_PRG.LL_SM (122)        | Local Read   |
| PLC_PRG.LL_SM (132)        | Local Write  |
| PLC_PRG.LL_SM (134)        | Local Write  |
| PLC_PRG.LL_SM (136)        | Local Write  |
| PLC_PRG.LL_SM (139)        | Local Read   |
| PLC_PRG.LL_SM (149)        | Local Write  |
| PLC_PRG.LL_SM (151)        | Local Write  |
| PLC_PRG.LL_SM (153)        | Local Write  |
| PLC_PRG.LL_SM (156)        | Local Write  |
| PLC_PRG.LL_SM (159)        | Local Read   |
| PLC_PRG.LL_SM (169)        | Local Write  |
| PLC_PRG.LL_SM (171)        | Local Write  |
| PLC_PRG.LL_SM (173)        | Local Write  |
| PLC_PRG.LL_SM (175)        | Local Write  |
| PLC_PRG.LL_SM (178)        | Local Read   |
| PLC_PRG.LL_SM (188)        | Local Write  |
| PLC_PRG.LL_SM (190)        | Local Write  |
| PLC_PRG.LL_SM (193)        | Local Write  |
| PLC_PRG.LL_SM (195)        | Local Write  |
| PLC_PRG.LL_SM (200)        | Local Write  |
| PLC_PRG.SC_OUTPUTS (273)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (275)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (277)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (279)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (281)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (283)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (285)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (287)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (289)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (291)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (293)   | Local Read   |
| PLC_PRG.VALVES (45)        | Local Read   |
| _global_init (292)         | Local Write  |
| DO_V201_OPEN_CMD%QX0.3     |              |
| PLC_PRG.PROCESS_IN... (36) | Global Read  |
| PLC_PRG.PROCESS_IN... (37) | Global Read  |
| PLC_PRG.PROCESS_OU... (6)  | Global Write |
| _global_init (8)           | Global Write |
| DO_SPARE_32%QX1.15         |              |
| _global_init (36)          | Global Write |
| LL_REQUEST                 |              |
| PLC_PRG.LL_SM (45)         | Local Read   |
| PLC_PRG.LL_SM (47)         | Local Read   |
| PLC_PRG.LL_SM (49)         | Local Read   |
| PLC_PRG.LL_SM (62)         | Local Read   |
| PLC_PRG.LL_SM (64)         | Local Read   |
| PLC_PRG.LL_SM (79)         | Local Read   |
| PLC_PRG.LL_SM (81)         | Local Read   |
| PLC_PRG.LL_SM (96)         | Local Read   |
| PLC_PRG.LL_SM (98)         | Local Read   |
| PLC_PRG.LL_SM (113)        | Local Read   |
| PLC_PRG.LL_SM (115)        | Local Read   |
| PLC_PRG.LL_SM (131)        | Local Read   |
| PLC_PRG.LL_SM (133)        | Local Read   |
| PLC_PRG.LL_SM (148)        | Local Read   |
| PLC_PRG.LL_SM (150)        | Local Read   |

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|----------------------------|--------------|
| PLC_PRG.LL_SM (168)        | Local Read   |
| PLC_PRG.LL_SM (170)        | Local Read   |
| PLC_PRG.LL_SM (187)        | Local Read   |
| PLC_PRG.LL_SM (189)        | Local Read   |
| PLC_PRG.SC_INPUTS (56)     | Local Write  |
| PLC_PRG.SC_INPUTS (58)     | Local Write  |
| PLC_PRG.SC_INPUTS (60)     | Local Write  |
| PLC_PRG.SC_INPUTS (62)     | Local Write  |
| PLC_PRG.SC_INPUTS (64)     | Local Write  |
| PLC_PRG.SC_OUTPUTS (204)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (206)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (208)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (210)   | Local Read   |
| _global_init (293)         | Local Write  |
| DO_TP211_ON_CMD%QX0.8      |              |
| PLC_PRG.PROCESS_IN... (62) | Global Read  |
| PLC_PRG.PROCESS_OU... (12) | Global Write |
| _global_init (13)          | Global Write |
| DO_SPARE_32%QX1.15         |              |
| _global_init (36)          | Global Write |
| DO_SPARE_31%QX1.14         |              |
| _global_init (35)          | Global Write |
| DO_SPARE_31%QX1.14         |              |
| _global_init (35)          | Global Write |
| LLV211_CLS_REQ_ES          |              |
| PLC_PRG.ES_SM (11)         | Local Write  |
| PLC_PRG.ES_SM (25)         | Local Write  |
| PLC_PRG.ES_SM (39)         | Local Write  |
| PLC_PRG.ES_SM (57)         | Local Write  |
| PLC_PRG.ES_SM (75)         | Local Write  |
| PLC_PRG.ES_SM (93)         | Local Write  |
| PLC_PRG.ES_SM (111)        | Local Write  |
| PLC_PRG.ES_SM (130)        | Local Write  |
| PLC_PRG.ES_SM (148)        | Local Write  |
| PLC_PRG.ES_SM (169)        | Local Write  |
| PLC_PRG.ES_SM (189)        | Local Write  |
| PLC_PRG.LL_SM (105)        | Local Write  |
| PLC_PRG.VALVES (50)        | Local Read   |
| _global_init (268)         | Local Write  |
| DO_VENT211_FAST_CMD%QX0.12 |              |
| PLC_PRG.PROCESS_IN... (52) | Global Read  |
| PLC_PRG.PROCESS_OU... (16) | Global Write |
| _global_init (17)          | Global Write |
| DO_SPARE_30%QX1.13         |              |
| _global_init (34)          | Global Write |
| LL_PE203_PII_OK            |              |
| PLC_PRG.FAULT_LOGIC (13)   | Local Read   |
| PLC_PRG.FAULT_LOGIC (13)   | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.PUMPS (14)         | Local Read   |
| PLC_PRG.SC_OUTPUTS (138)   | Local Read   |
| _global_init (235)         | Local Write  |
| DO_TP212_ON_CMD%QX1.0      |              |
| PLC_PRG.PROCESS_IN... (74) | Global Read  |
| PLC_PRG.PROCESS_OU... (21) | Global Write |
| _global_init (21)          | Global Write |
| DO_SPARE_29%QX1.12         |              |
| _global_init (33)          | Global Write |
| LL_V202_OPN                |              |
| PLC_PRG.FAULT_LOGIC (6)    | Local Read   |
| PLC_PRG.FAULT_LOGIC (6)    | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (136)   | Local Read   |
| PLC_PRG.VALVES (12)        | Local Read   |
| _global_init (233)         | Local Write  |
| DO_TPV212_OPEN_CMD%QX1.1   |              |
| PLC_PRG.PROCESS_IN... (70) | Global Read  |
| PLC_PRG.PROCESS_IN... (71) | Global Read  |
| PLC_PRG.PROCESS_OU... (22) | Global Write |
| _global_init (22)          | Global Write |
| DO_SPARE_29%QX1.12         |              |
| _global_init (33)          | Global Write |
| DO_SPARE_28%QX1.11         |              |

|                                |              |
|--------------------------------|--------------|
| _global_init (32)              | Global Write |
| LL_PE202_PSL_LO                |              |
| PLC_PRG.FAULT_LOGIC (7)        | Local Read   |
| PLC_PRG.FAULT_LOGIC (7)        | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)       | Local Read   |
| PLC_PRG.SC_OUTPUTS (137)       | Local Read   |
| PLC_PRG.VALVES (12)            | Local Read   |
| PLC_PRG.VALVES (20)            | Local Read   |
| _global_init (234)             | Local Write  |
| DO_SPARE_27%QX1.10             |              |
| _global_init (31)              | Global Write |
| LL_PE101_PSL_LO                |              |
| PLC_PRG.FAULT_LOGIC (4)        | Local Read   |
| PLC_PRG.FAULT_LOGIC (4)        | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)       | Local Read   |
| PLC_PRG.SC_OUTPUTS (134)       | Local Read   |
| PLC_PRG.VALVES (4)             | Local Read   |
| _global_init (231)             | Local Write  |
| DO_VENT211_SLOW_CMD%QX0.11     |              |
| PLC_PRG.PROCESS_IN... (52)     | Global Read  |
| PLC_PRG.PROCESS_OU... (15)     | Global Write |
| _global_init (16)              | Global Write |
| DO_SPARE_26%QX1.9              |              |
| _global_init (30)              | Global Write |
| LL_LL_CONFIG_OK                |              |
| PLC_PRG.FAULT_LOGIC (11)       | Local Read   |
| PLC_PRG.FAULT_LOGIC (11)       | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)       | Local Read   |
| PLC_PRG.LL_SM (4)              | Local Read   |
| PLC_PRG.SC_OUTPUTS (143)       | Local Read   |
| _global_init (239)             | Local Write  |
| DO_V204_OPEN_CMD%QX0.5         |              |
| PLC_PRG.PROCESS_IN... (45)     | Global Read  |
| PLC_PRG.PROCESS_IN... (46)     | Global Read  |
| PLC_PRG.PROCESS_OU... (8)      | Global Write |
| _global_init (10)              | Global Write |
| DO_SPARE_28%QX1.11             |              |
| _global_init (32)              | Global Write |
| DO_SPARE_27%QX1.10             |              |
| _global_init (31)              | Global Write |
| DO_V101_OPEN_CMD%QX0.2         |              |
| PLC_PRG.PROCESS_IN... (33)     | Global Read  |
| PLC_PRG.PROCESS_IN... (34)     | Global Read  |
| PLC_PRG.PROCESS_OU... (5)      | Global Write |
| _global_init (7)               | Global Write |
| DO_SPARE_25%QX1.8              |              |
| _global_init (29)              | Global Write |
| DO_SPARE_24%QX1.7              |              |
| _global_init (28)              | Global Write |
| DO_TPV211_OPEN_CMD%QX0.9       |              |
| PLC_PRG.PROCESS_IN... (58)     | Global Read  |
| PLC_PRG.PROCESS_IN... (59)     | Global Read  |
| PLC_PRG.PROCESS_OU... (13)     | Global Write |
| _global_init (14)              | Global Write |
| DO_SPARE_23%QX1.6              |              |
| _global_init (27)              | Global Write |
| DO_SPARE_22%QX1.5              |              |
| _global_init (26)              | Global Write |
| DO_TP201_VENT_ENABLE_CMD%QX0.7 |              |
| PLC_PRG.PROCESS_OU... (10)     | Global Write |
| _global_init (12)              | Global Write |
| DO_SLOTV211_OPEN_CMD%QX0.14    |              |
| PLC_PRG.PROCESS_OU... (18)     | Global Write |
| _global_init (19)              | Global Write |
| DO_SLOTV211_CLOSE_CMD%QX0.15   |              |
| PLC_PRG.PROCESS_OU... (19)     | Global Write |
| _global_init (20)              | Global Write |
| DI_V204_OPEN%IX18.2            |              |
| PLC_PRG.PROCESS_IN... (45)     | Global Read  |
| DI_V204_OPEN%IX18.2            |              |
| PLC_PRG.PROCESS_IN... (45)     | Global Read  |
| DI_V204_CLOSED%IX18.3          |              |
| PLC_PRG.PROCESS_IN... (46)     | Global Read  |

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|---------------------------|-------|--------------|
| DI_V204_CLOSED%IX18.3     |       |              |
| PLC_PRG.PROCESS_IN...     | (46)  | Global Read  |
| DI_V203_OPEN%IX18.0       |       |              |
| PLC_PRG.PROCESS_IN...     | (42)  | Global Read  |
| DI_V203_CLOSED%IX18.1     |       |              |
| PLC_PRG.PROCESS_IN...     | (43)  | Global Read  |
| DI_V203_CLOSED%IX18.1     |       |              |
| PLC_PRG.PROCESS_IN...     | (43)  | Global Read  |
| DI_V202_OPEN%IX17.14      |       |              |
| PLC_PRG.PROCESS_IN...     | (39)  | Global Read  |
| DO_SPARE_24%QX1.7         |       |              |
| _global_init              | (28)  | Global Write |
| DI_V202_CLOSED%IX17.15    |       |              |
| PLC_PRG.PROCESS_IN...     | (40)  | Global Read  |
| DI_V202_CLOSED%IX17.15    |       |              |
| PLC_PRG.PROCESS_IN...     | (40)  | Global Read  |
| DI_V201_OPEN%IX17.12      |       |              |
| PLC_PRG.PROCESS_IN...     | (36)  | Global Read  |
| DI_V101_OPEN%IX17.10      |       |              |
| PLC_PRG.PROCESS_IN...     | (33)  | Global Read  |
| DI_V101_CLOSED%IX17.11    |       |              |
| PLC_PRG.PROCESS_IN...     | (34)  | Global Read  |
| LL_ES_CONFIG_OK           |       |              |
| PLC_PRG.ES_SM             | (4)   | Local Read   |
| PLC_PRG.FAULT_LOGIC       | (10)  | Local Read   |
| PLC_PRG.FAULT_LOGIC       | (10)  | Local Write  |
| PLC_PRG.FAULT_LOGIC       | (37)  | Local Read   |
| PLC_PRG.SC_OUTPUTS        | (142) | Local Read   |
| _global_init              | (238) | Local Write  |
| DI_V100_CLOSED%IX17.9     |       |              |
| PLC_PRG.PROCESS_IN...     | (31)  | Global Read  |
| DO_SPARE_23%QX1.6         |       |              |
| _global_init              | (27)  | Global Write |
| DO_RPV212_OPEN_CMD%QX1.2  |       |              |
| PLC_PRG.PROCESS_IN...     | (67)  | Global Read  |
| PLC_PRG.PROCESS_IN...     | (68)  | Global Read  |
| PLC_PRG.PROCESS_OU...     | (23)  | Global Write |
| _global_init              | (23)  | Global Write |
| DO_RP2111_ON_CMD%QX0.1    |       |              |
| PLC_PRG.PROCESS_OU...     | (4)   | Global Write |
| _global_init              | (6)   | Global Write |
| DO_RP2110_ON_CMD%QX0.0    |       |              |
| PLC_PRG.PROCESS_OU...     | (3)   | Global Write |
| _global_init              | (5)   | Global Write |
| DI_V202_OPEN%IX17.14      |       |              |
| PLC_PRG.PROCESS_IN...     | (39)  | Global Read  |
| DI_V101_OPEN%IX17.10      |       |              |
| PLC_PRG.PROCESS_IN...     | (33)  | Global Read  |
| DI_V101_CLOSED%IX17.11    |       |              |
| PLC_PRG.PROCESS_IN...     | (34)  | Global Read  |
| DI_TPV212_OPEN%IX18.12    |       |              |
| PLC_PRG.PROCESS_IN...     | (70)  | Global Read  |
| DI_V201_OPEN%IX17.12      |       |              |
| PLC_PRG.PROCESS_IN...     | (36)  | Global Read  |
| DI_TPV211_CLOSED%IX18.9   |       |              |
| PLC_PRG.PROCESS_IN...     | (59)  | Global Read  |
| DI_V201_CLOSED%IX17.13    |       |              |
| PLC_PRG.PROCESS_IN...     | (37)  | Global Read  |
| DI_V201_CLOSED%IX17.13    |       |              |
| PLC_PRG.PROCESS_IN...     | (37)  | Global Read  |
| DI_V100_OPEN%IX17.8       |       |              |
| PLC_PRG.PROCESS_IN...     | (30)  | Global Read  |
| DI_TP212_AT_SPEED%IX19.0  |       |              |
| PLC_PRG.PROCESS_IN...     | (74)  | Global Read  |
| DI_V100_CLOSED%IX17.9     |       |              |
| PLC_PRG.PROCESS_IN...     | (31)  | Global Read  |
| DI_TP211_TURBO_OK%IX18.15 |       |              |
| PLC_PRG.PROCESS_IN...     | (61)  | Global Read  |
| DI_TPV212_CLOSED%IX18.13  |       |              |
| PLC_PRG.PROCESS_IN...     | (71)  | Global Read  |
| DI_TP211_AT_SPEED%IX18.14 |       |              |
| PLC_PRG.PROCESS_IN...     | (62)  | Global Read  |
| DI_TPV211_OPEN%IX18.8     |       |              |



|                            |              |
|----------------------------|--------------|
| PLC_PRG.PROCESS_IN... (58) | Global Read  |
| DI_TP201_TURBO_OK%IX18.4   |              |
| PLC_PRG.PROCESS_IN... (48) | Global Read  |
| DI_TP212_TURBO_OK%IX19.1   |              |
| PLC_PRG.PROCESS_IN... (73) | Global Read  |
| DI_TPV212_OPEN%IX18.12     |              |
| PLC_PRG.PROCESS_IN... (70) | Global Read  |
| DI_TPV211_CLOSED%IX18.9    |              |
| PLC_PRG.PROCESS_IN... (59) | Global Read  |
| DI_TP212_TURBO_OK%IX19.1   |              |
| PLC_PRG.PROCESS_IN... (73) | Global Read  |
| DI_TP211_TURBO_OK%IX18.15  |              |
| PLC_PRG.PROCESS_IN... (61) | Global Read  |
| DI_TPV212_CLOSED%IX18.13   |              |
| PLC_PRG.PROCESS_IN... (71) | Global Read  |
| DI_TP211_AT_SPEED%IX18.14  |              |
| PLC_PRG.PROCESS_IN... (62) | Global Read  |
| DI_TP201_AT_SPEED%IX18.5   |              |
| PLC_PRG.PROCESS_IN... (50) | Global Read  |
| DI_SLOTV211_OPEN%IX19.2    |              |
| PLC_PRG.PROCESS_IN... (76) | Global Read  |
| DI_SLOTV211_CLOSED%IX19.3  |              |
| PLC_PRG.PROCESS_IN... (77) | Global Read  |
| DI_SLOTV211_CLOSED%IX19.3  |              |
| PLC_PRG.PROCESS_IN... (77) | Global Read  |
| DI_TP201_AT_SPEED%IX18.5   |              |
| PLC_PRG.PROCESS_IN... (50) | Global Read  |
| DI_RPV212_OPEN%IX18.10     |              |
| PLC_PRG.PROCESS_IN... (67) | Global Read  |
| DI_RPV212_OPEN%IX18.10     |              |
| PLC_PRG.PROCESS_IN... (67) | Global Read  |
| DI_RPV212_CLOSED%IX18.11   |              |
| PLC_PRG.PROCESS_IN... (68) | Global Read  |
| DI_RPV212_CLOSED%IX18.11   |              |
| PLC_PRG.PROCESS_IN... (68) | Global Read  |
| DI_RPV211_OPEN%IX18.6      |              |
| PLC_PRG.PROCESS_IN... (55) | Global Read  |
| DI_RPV211_OPEN%IX18.6      |              |
| PLC_PRG.PROCESS_IN... (55) | Global Read  |
| DI_RPV211_CLOSED%IX18.7    |              |
| PLC_PRG.PROCESS_IN... (56) | Global Read  |
| DI_RPV211_CLOSED%IX18.7    |              |
| PLC_PRG.PROCESS_IN... (56) | Global Read  |
| DI_RP2110_ON%IX16.4        |              |
| PLC_PRG.PROCESS_IN... (7)  | Global Read  |
| PLC_PRG.SC_OUTPUTS (11)    | Global Read  |
| DI_PE212_PSL_MIDLO%IX17.6  |              |
| PLC_PRG.PROCESS_IN... (27) | Global Read  |
| PLC_PRG.SC_OUTPUTS (31)    | Global Read  |
| DI_PE212_PSL_MIDLO%IX17.6  |              |
| PLC_PRG.PROCESS_IN... (27) | Global Read  |
| PLC_PRG.SC_OUTPUTS (31)    | Global Read  |
| DO_VENT212_SLOW_CMD%QX1.3  |              |
| PLC_PRG.PROCESS_IN... (64) | Global Read  |
| PLC_PRG.PROCESS_OU... (24) | Global Write |
| _global_init (24)          | Global Write |
| DI_PE212_PSL_MIDHI%IX17.5  |              |
| PLC_PRG.PROCESS_IN... (26) | Global Read  |
| PLC_PRG.SC_OUTPUTS (30)    | Global Read  |
| DI_PE212_PSL_LO%IX17.7     |              |
| PLC_PRG.PROCESS_IN... (28) | Global Read  |
| PLC_PRG.SC_OUTPUTS (32)    | Global Read  |
| DI_PE212_PSL_HI%IX17.4     |              |
| PLC_PRG.PROCESS_IN... (25) | Global Read  |
| PLC_PRG.SC_OUTPUTS (29)    | Global Read  |
| DI_PE212_PSL_LO%IX17.7     |              |
| PLC_PRG.PROCESS_IN... (28) | Global Read  |
| PLC_PRG.SC_OUTPUTS (32)    | Global Read  |
| DI_PE212_PIY_OK%IX16.10    |              |
| PLC_PRG.PROCESS_IN... (24) | Global Read  |
| PLC_PRG.PROCESS_IN... (25) | Global Read  |
| PLC_PRG.PROCESS_IN... (26) | Global Read  |
| PLC_PRG.SC_OUTPUTS (28)    | Global Read  |

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|----------------------------|--------|-------|
| DI_PE211_PSL_MIDLO%IX17.2  |        |       |
| PLC_PRG.PROCESS_IN... (21) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (25)    | Global | Read  |
| DI_PE211_PSL_MIDLO%IX17.2  |        |       |
| PLC_PRG.PROCESS_IN... (21) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (25)    | Global | Read  |
| DI_PE212_PIIY_OK%IX16.10   |        |       |
| PLC_PRG.PROCESS_IN... (24) | Global | Read  |
| PLC_PRG.PROCESS_IN... (25) | Global | Read  |
| PLC_PRG.PROCESS_IN... (26) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (28)    | Global | Read  |
| DI_PE211_PSL_MIDHI%IX17.1  |        |       |
| PLC_PRG.PROCESS_IN... (20) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (24)    | Global | Read  |
| DI_PE211_PSL_MIDHI%IX17.1  |        |       |
| PLC_PRG.PROCESS_IN... (20) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (24)    | Global | Read  |
| DI_PE211_PSL_LO%IX17.3     |        |       |
| PLC_PRG.PROCESS_IN... (22) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (26)    | Global | Read  |
| DI_PE211_PSL_LO%IX17.3     |        |       |
| PLC_PRG.PROCESS_IN... (22) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (26)    | Global | Read  |
| DO_SPARE_22%QX1.5          |        |       |
| _global_init (26)          | Global | Write |
| DI_PE211_PIIY_OK%IX16.9    |        |       |
| PLC_PRG.PROCESS_IN... (18) | Global | Read  |
| PLC_PRG.PROCESS_IN... (19) | Global | Read  |
| PLC_PRG.PROCESS_IN... (20) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (22)    | Global | Read  |
| DI_PE211_PIIY_OK%IX16.9    |        |       |
| PLC_PRG.PROCESS_IN... (18) | Global | Read  |
| PLC_PRG.PROCESS_IN... (19) | Global | Read  |
| PLC_PRG.PROCESS_IN... (20) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (22)    | Global | Read  |
| DI_PE211_PSL%IX16.7        |        |       |
| PLC_PRG.PROCESS_IN... (10) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (14)    | Global | Read  |
| DI_PE203_PSL_MIDLO%IX16.14 |        |       |
| PLC_PRG.PROCESS_IN... (15) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (19)    | Global | Read  |
| DI_PE203_PSL_MIDLO%IX16.14 |        |       |
| PLC_PRG.PROCESS_IN... (15) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (19)    | Global | Read  |
| DI_RP2111_ON%IX16.5        |        |       |
| PLC_PRG.PROCESS_IN... (8)  | Global | Read  |
| PLC_PRG.SC_OUTPUTS (12)    | Global | Read  |
| DI_PE203_PSL_MIDHI%IX16.13 |        |       |
| PLC_PRG.PROCESS_IN... (14) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (18)    | Global | Read  |
| DI_PE203_PSL_LO%IX16.15    |        |       |
| PLC_PRG.PROCESS_IN... (16) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (20)    | Global | Read  |
| DI_PE2110_PSL%IX16.6       |        |       |
| PLC_PRG.PROCESS_IN... (9)  | Global | Read  |
| PLC_PRG.SC_OUTPUTS (13)    | Global | Read  |
| DI_PE203_PSL_HI%IX16.12    |        |       |
| PLC_PRG.PROCESS_IN... (13) | Global | Read  |
| PLC_PRG.SC_OUTPUTS (17)    | Global | Read  |
| DO_TPV212_OPEN_CMD%QX1.1   |        |       |
| PLC_PRG.PROCESS_IN... (70) | Global | Read  |
| PLC_PRG.PROCESS_IN... (71) | Global | Read  |
| PLC_PRG.PROCESS_OU... (22) | Global | Write |
| _global_init (22)          | Global | Write |
| DI_PE202_PSL_LO%IX16.2     |        |       |
| PLC_PRG.PROCESS_IN... (5)  | Global | Read  |
| DO_RPV212_OPEN_CMD%QX1.2   |        |       |
| PLC_PRG.PROCESS_IN... (67) | Global | Read  |
| PLC_PRG.PROCESS_IN... (68) | Global | Read  |
| PLC_PRG.PROCESS_OU... (23) | Global | Write |
| _global_init (23)          | Global | Write |
| DI_PE201_PSL_LO%IX16.1     |        |       |
| PLC_PRG.PROCESS_IN... (4)  | Global | Read  |

|                               |        |       |
|-------------------------------|--------|-------|
| DI_LL211_ARM_RETRACTED%IX19.5 |        |       |
| PLC_PRG.PROCESS_IN... (80)    | Global | Read  |
| PLC_PRG.SC_OUTPUTS (35)       | Global | Read  |
| on_cmd                        |        |       |
| PLC_PRG.PROCESS_OU... (9)     | Local  | Read  |
| PLC_PRG.PROCESS_OU... (12)    | Local  | Read  |
| PLC_PRG.PROCESS_OU... (21)    | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (117)      | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (120)      | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (125)      | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (129)      | Local  | Read  |
| PLC_PRG.VALVES (29)           | Local  | Read  |
| PLC_PRG.VALVES (78)           | Local  | Read  |
| PLC_PRG.VALVES (110)          | Local  | Read  |
| TP_FB (3)                     | Local  | Read  |
| TP_FB (3)                     | Local  | Write |
| TP_FB (6)                     | Local  | Read  |
| TP_FBinit (6)                 | Local  | Write |
| cACTUATOR_TARGET              |        |       |
| PLC_PRG.ACTUATOR_I... (7)     | Local  | Read  |
| PLC_PRG.ACTUATOR_O... (4)     | Local  | Read  |
| _global_init (8)              | Local  | Write |
| _global_init (9)              | Local  | Write |
| _global_init (10)             | Local  | Write |
| _global_init (11)             | Local  | Write |
| on_cmd                        |        |       |
| PLC_PRG.PROCESS_OU... (3)     | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (107)      | Local  | Read  |
| RP_FB (2)                     | Local  | Read  |
| RP_FB (2)                     | Local  | Write |
| RP_FB (4)                     | Local  | Read  |
| RP_FBinit (5)                 | Local  | Write |
| bID                           |        |       |
| ACTUATOR_SM.CONNECT (25)      | Local  | Read  |
| ACTUATOR_SM.DRG1_W... (26)    | Local  | Read  |
| ACTUATOR_SM.PCMD_W... (27)    | Local  | Read  |
| ACTUATOR_SM.STATUS... (26)    | Local  | Read  |
| _global_init (3)              | Local  | Write |
| oMBMaster                     |        |       |
| ACTUATOR_SM (16)              | Local  | Read  |
| ACTUATOR_SM.CONNECT (25)      | Local  | Write |
| ACTUATOR_SM.CONNECT (28)      | Local  | Read  |
| ACTUATOR_SM.DRG1_W... (26)    | Local  | Write |
| ACTUATOR_SM.DRG1_W... (29)    | Local  | Read  |
| ACTUATOR_SM.PCMD_W... (27)    | Local  | Write |
| ACTUATOR_SM.PCMD_W... (30)    | Local  | Read  |
| ACTUATOR_SM.STATUS... (26)    | Local  | Write |
| ACTUATOR_SM.STATUS... (29)    | Local  | Read  |
| ACTUATORinit (6)              | Local  | Read  |
| off_req                       |        |       |
| PLC_PRG.PUMPS (18)            | Local  | Write |
| PLC_PRG.PUMPS (26)            | Local  | Write |
| PLC_PRG.PUMPS (34)            | Local  | Write |
| TP_FB (3)                     | Local  | Read  |
| TP_FBinit (5)                 | Local  | Write |
| LL_TP212_OK                   |        |       |
| PLC_PRG.FAULT_LOGIC (21)      | Local  | Read  |
| PLC_PRG.FAULT_LOGIC (21)      | Local  | Write |
| PLC_PRG.FAULT_LOGIC (37)      | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (149)      | Local  | Read  |
| _global_init (244)            | Local  | Write |
| off_req                       |        |       |
| PLC_PRG.PUMPS (10)            | Local  | Write |
| RP_FB (2)                     | Local  | Read  |
| RP_FBinit (4)                 | Local  | Write |
| LL_TP211_OK                   |        |       |
| PLC_PRG.FAULT_LOGIC (20)      | Local  | Read  |
| PLC_PRG.FAULT_LOGIC (20)      | Local  | Write |
| PLC_PRG.FAULT_LOGIC (37)      | Local  | Read  |
| PLC_PRG.SC_OUTPUTS (148)      | Local  | Read  |
| _global_init (243)            | Local  | Write |
| off_ena                       |        |       |
| PLC_PRG.PUMPS (16)            | Local  | Write |

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|----------------------------|--------------|
| PLC_PRG.PUMPS (24)         | Local Write  |
| PLC_PRG.PUMPS (32)         | Local Write  |
| PLC_PRG.SC_OUTPUTS (119)   | Local Read   |
| TP_FB (3)                  | Local Read   |
| TP_FB (6)                  | Local Read   |
| TP_FBinit (3)              | Local Write  |
| MAX_SOCKET_FD_SETSIZE      |              |
| _global_init (164)         | Global Write |
| LL_PE201_PSL_LO            |              |
| PLC_PRG.FAULT_LOGIC (5)    | Local Read   |
| PLC_PRG.FAULT_LOGIC (5)    | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (135)   | Local Read   |
| PLC_PRG.VALVES (4)         | Local Read   |
| PLC_PRG.VALVES (12)        | Local Read   |
| _global_init (232)         | Local Write  |
| not_symbol                 |              |
| PLC_PRG.SC_OUTPUTS (46)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (54)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (66)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (74)    | Local Read   |
| PLC_PRG.SC_OUTPUTS (113)   | Local Read   |
| VALVE_FB (6)               | Local Write  |
| VALVE_FBinit (7)           | Local Write  |
| LL_CONFIG_OK               |              |
| PLC_PRG.BYPASSES (5)       | Local Write  |
| PLC_PRG.FAULT_LOGIC (11)   | Local Read   |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| _global_init (229)         | Local Write  |
| LL_ACTUATOR_OK             |              |
| PLC_PRG.BR_SM (4)          | Local Read   |
| PLC_PRG.BR_SM (13)         | Local Read   |
| PLC_PRG.FAULT_LOGIC (3)    | Local Read   |
| PLC_PRG.FAULT_LOGIC (3)    | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (133)   | Local Read   |
| _global_init (230)         | Local Write  |
| LL211_ARM_RETRACTED        |              |
| PLC_PRG.PROCESS_IN... (80) | Local Write  |
| PLC_PRG.VALVES (47)        | Local Read   |
| PLC_PRG.VALVES (48)        | Local Read   |
| _global_init (227)         | Local Write  |
| ES_STATE                   |              |
| PLC_PRG.ES_SM (5)          | Local Write  |
| PLC_PRG.ES_SM (9)          | Local Read   |
| PLC_PRG.ES_SM (20)         | Local Write  |
| PLC_PRG.ES_SM (23)         | Local Read   |
| PLC_PRG.ES_SM (34)         | Local Write  |
| PLC_PRG.ES_SM (37)         | Local Read   |
| PLC_PRG.ES_SM (48)         | Local Write  |
| PLC_PRG.ES_SM (50)         | Local Write  |
| PLC_PRG.ES_SM (52)         | Local Write  |
| PLC_PRG.ES_SM (55)         | Local Read   |
| PLC_PRG.ES_SM (66)         | Local Write  |
| PLC_PRG.ES_SM (68)         | Local Write  |
| PLC_PRG.ES_SM (70)         | Local Write  |
| PLC_PRG.ES_SM (73)         | Local Read   |
| PLC_PRG.ES_SM (84)         | Local Write  |
| PLC_PRG.ES_SM (86)         | Local Write  |
| PLC_PRG.ES_SM (88)         | Local Write  |
| PLC_PRG.ES_SM (91)         | Local Read   |
| PLC_PRG.ES_SM (102)        | Local Write  |
| PLC_PRG.ES_SM (104)        | Local Write  |
| PLC_PRG.ES_SM (106)        | Local Write  |
| PLC_PRG.ES_SM (109)        | Local Read   |
| PLC_PRG.ES_SM (120)        | Local Write  |
| PLC_PRG.ES_SM (122)        | Local Write  |
| PLC_PRG.ES_SM (125)        | Local Write  |
| PLC_PRG.ES_SM (128)        | Local Read   |
| PLC_PRG.ES_SM (139)        | Local Write  |
| PLC_PRG.ES_SM (141)        | Local Write  |
| PLC_PRG.ES_SM (143)        | Local Write  |
| PLC_PRG.ES_SM (146)        | Local Read   |

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|----------------------------|--------------|
| PLC_PRG.ES_SM (157)        | Local Write  |
| PLC_PRG.ES_SM (159)        | Local Write  |
| PLC_PRG.ES_SM (161)        | Local Write  |
| PLC_PRG.ES_SM (164)        | Local Write  |
| PLC_PRG.ES_SM (167)        | Local Read   |
| PLC_PRG.ES_SM (178)        | Local Write  |
| PLC_PRG.ES_SM (180)        | Local Write  |
| PLC_PRG.ES_SM (182)        | Local Write  |
| PLC_PRG.ES_SM (184)        | Local Write  |
| PLC_PRG.ES_SM (187)        | Local Read   |
| PLC_PRG.ES_SM (198)        | Local Write  |
| PLC_PRG.ES_SM (200)        | Local Write  |
| PLC_PRG.ES_SM (203)        | Local Write  |
| PLC_PRG.ES_SM (205)        | Local Write  |
| PLC_PRG.ES_SM (210)        | Local Write  |
| PLC_PRG.SC_OUTPUTS (244)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (246)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (248)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (250)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (252)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (254)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (256)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (258)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (260)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (262)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (264)   | Local Read   |
| PLC_PRG.VALVES (37)        | Local Read   |
| PLC_PRG.VALVES (45)        | Local Read   |
| _global_init (290)         | Local Write  |
| DO_VENT211_SLOW_CMD%QX0.11 |              |
| PLC_PRG.PROCESS_IN... (52) | Global Read  |
| PLC_PRG.PROCESS_OU... (15) | Global Write |
| _global_init (16)          | Global Write |
| DO_VENT211_FAST_CMD%QX0.12 |              |
| PLC_PRG.PROCESS_IN... (52) | Global Read  |
| PLC_PRG.PROCESS_OU... (16) | Global Write |
| _global_init (17)          | Global Write |
| ES_REQUEST                 |              |
| PLC_PRG.ES_SM (47)         | Local Read   |
| PLC_PRG.ES_SM (49)         | Local Read   |
| PLC_PRG.ES_SM (51)         | Local Read   |
| PLC_PRG.ES_SM (65)         | Local Read   |
| PLC_PRG.ES_SM (67)         | Local Read   |
| PLC_PRG.ES_SM (83)         | Local Read   |
| PLC_PRG.ES_SM (85)         | Local Read   |
| PLC_PRG.ES_SM (101)        | Local Read   |
| PLC_PRG.ES_SM (103)        | Local Read   |
| PLC_PRG.ES_SM (119)        | Local Read   |
| PLC_PRG.ES_SM (121)        | Local Read   |
| PLC_PRG.ES_SM (138)        | Local Read   |
| PLC_PRG.ES_SM (140)        | Local Read   |
| PLC_PRG.ES_SM (156)        | Local Read   |
| PLC_PRG.ES_SM (158)        | Local Read   |
| PLC_PRG.ES_SM (177)        | Local Read   |
| PLC_PRG.ES_SM (179)        | Local Read   |
| PLC_PRG.ES_SM (197)        | Local Read   |
| PLC_PRG.ES_SM (199)        | Local Read   |
| PLC_PRG.SC_INPUTS (41)     | Local Write  |
| PLC_PRG.SC_INPUTS (43)     | Local Write  |
| PLC_PRG.SC_INPUTS (45)     | Local Write  |
| PLC_PRG.SC_INPUTS (47)     | Local Write  |
| PLC_PRG.SC_INPUTS (49)     | Local Write  |
| PLC_PRG.SC_OUTPUTS (189)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (191)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (193)   | Local Read   |
| PLC_PRG.SC_OUTPUTS (195)   | Local Read   |
| _global_init (291)         | Local Write  |
| DO_VENT212_FAST_CMD%QX1.4  |              |
| PLC_PRG.PROCESS_IN... (64) | Global Read  |
| PLC_PRG.PROCESS_OU... (25) | Global Write |
| _global_init (25)          | Global Write |
| DO_V204_OPEN_CMD%QX0.5     |              |
| PLC_PRG.PROCESS_IN... (45) | Global Read  |

|                                |              |
|--------------------------------|--------------|
| PLC_PRG.PROCESS_IN... (46)     | Global Read  |
| PLC_PRG.PROCESS_OU... (8)      | Global Write |
| _global_init (10)              | Global Write |
| DO_TPV211_OPEN_CMD%QX0.9       |              |
| PLC_PRG.PROCESS_IN... (58)     | Global Read  |
| PLC_PRG.PROCESS_IN... (59)     | Global Read  |
| PLC_PRG.PROCESS_OU... (13)     | Global Write |
| _global_init (14)              | Global Write |
| ES_CONFIG_OK                   |              |
| PLC_PRG.BYPASSES (4)           | Local Write  |
| PLC_PRG.FAULT_LOGIC (10)       | Local Read   |
| PLC_PRG.FAULT_LOGIC (37)       | Local Read   |
| _global_init (228)             | Local Write  |
| DO_TP201_VENT_ENABLE_CMD%QX0.7 |              |
| PLC_PRG.PROCESS_OU... (10)     | Global Write |
| _global_init (12)              | Global Write |
| DO_V203_OPEN_CMD%QX0.4         |              |
| PLC_PRG.PROCESS_IN... (42)     | Global Read  |
| PLC_PRG.PROCESS_IN... (43)     | Global Read  |
| PLC_PRG.PROCESS_OU... (7)      | Global Write |
| _global_init (9)               | Global Write |
| DO_SPARE_14%QX0.13             |              |
| _global_init (18)              | Global Write |
| DO_SLOTV211_OPEN_CMD%QX0.14    |              |
| PLC_PRG.PROCESS_OU... (18)     | Global Write |
| _global_init (19)              | Global Write |
| DO_SLOTV211_CLOSE_CMD%QX0.15   |              |
| PLC_PRG.PROCESS_OU... (19)     | Global Write |
| _global_init (20)              | Global Write |
| DO_TP201_ON_CMD%QX0.6          |              |
| PLC_PRG.PROCESS_IN... (49)     | Global Read  |
| PLC_PRG.PROCESS_OU... (9)      | Global Write |
| _global_init (11)              | Global Write |
| DO_TP201_ON_CMD%QX0.6          |              |
| PLC_PRG.PROCESS_IN... (49)     | Global Read  |
| PLC_PRG.PROCESS_OU... (9)      | Global Write |
| _global_init (11)              | Global Write |
| DI_TP201_TURBO_OK%IX18.4       |              |
| PLC_PRG.PROCESS_IN... (48)     | Global Read  |
| DI_SLOTV211_OPEN%IX19.2        |              |
| PLC_PRG.PROCESS_IN... (76)     | Global Read  |
| DI_RP2111_ON%IX16.5            |              |
| PLC_PRG.PROCESS_IN... (8)      | Global Read  |
| PLC_PRG.SC_OUTPUTS (12)        | Global Read  |
| DI_PE211_PSL_HI%IX17.0         |              |
| PLC_PRG.PROCESS_IN... (19)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (23)        | Global Read  |
| DI_PE203_PSL_LO%IX16.15        |              |
| PLC_PRG.PROCESS_IN... (16)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (20)        | Global Read  |
| DO_RPV211_OPEN_CMD%QX0.10      |              |
| PLC_PRG.PROCESS_IN... (55)     | Global Read  |
| PLC_PRG.PROCESS_IN... (56)     | Global Read  |
| PLC_PRG.PROCESS_OU... (14)     | Global Write |
| _global_init (15)              | Global Write |
| DI_PE203_PSL_HI%IX16.12        |              |
| PLC_PRG.PROCESS_IN... (13)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (17)        | Global Read  |
| DI_RP2110_ON%IX16.4            |              |
| PLC_PRG.PROCESS_IN... (7)      | Global Read  |
| PLC_PRG.SC_OUTPUTS (11)        | Global Read  |
| DI_PE212_PSL_MIDHI%IX17.5      |              |
| PLC_PRG.PROCESS_IN... (26)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (30)        | Global Read  |
| DI_PE203_PIIY_OK%IX16.8        |              |
| PLC_PRG.PROCESS_IN... (12)     | Global Read  |
| PLC_PRG.PROCESS_IN... (13)     | Global Read  |
| PLC_PRG.PROCESS_IN... (14)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (16)        | Global Read  |
| DI_PE212_PSL_HI%IX17.4         |              |
| PLC_PRG.PROCESS_IN... (25)     | Global Read  |
| PLC_PRG.SC_OUTPUTS (29)        | Global Read  |
| DI_LL211_LID_CLOSED%IX19.4     |              |

|                            |             |
|----------------------------|-------------|
| PLC_PRG.PROCESS_IN... (79) | Global Read |
| PLC_PRG.SC_OUTPUTS (34)    | Global Read |
| off_ena                    |             |
| PLC_PRG.PUMPS (8)          | Local Write |
| RP_FB (2)                  | Local Read  |
| RP_FB (4)                  | Local Read  |
| RP_FBinit (2)              | Local Write |
| close_req                  |             |
| PLC_PRG.VALVES (8)         | Local Write |
| PLC_PRG.VALVES (16)        | Local Write |
| PLC_PRG.VALVES (24)        | Local Write |
| PLC_PRG.VALVES (32)        | Local Write |
| PLC_PRG.VALVES (40)        | Local Write |
| PLC_PRG.VALVES (58)        | Local Write |
| PLC_PRG.VALVES (66)        | Local Write |
| PLC_PRG.VALVES (74)        | Local Write |
| PLC_PRG.VALVES (82)        | Local Write |
| PLC_PRG.VALVES (90)        | Local Write |
| PLC_PRG.VALVES (98)        | Local Write |
| PLC_PRG.VALVES (106)       | Local Write |
| PLC_PRG.VALVES (114)       | Local Write |
| VALVE_FB (3)               | Local Read  |
| VALVE_FBinit (5)           | Local Write |
| oActuator                  |             |
| ACTUATOR_SM (3)            | Local Read  |
| ACTUATOR_SM (5)            | Local Write |
| ACTUATOR_SM (7)            | Local Write |
| ACTUATOR_SM (9)            | Local Read  |
| ACTUATOR_SM (10)           | Local Write |
| ACTUATOR_SM (12)           | Local Write |
| ACTUATOR_SM (14)           | Local Read  |
| ACTUATOR_SM (16)           | Local Read  |
| ACTUATOR_SM (17)           | Local Write |
| ACTUATOR_SM (18)           | Local Write |
| ACTUATOR_SM (21)           | Local Read  |
| ACTUATOR_SM (23)           | Local Read  |
| ACTUATOR_SM (25)           | Local Read  |
| ACTUATOR_SM (27)           | Local Write |
| ACTUATOR_SM (29)           | Local Read  |
| ACTUATOR_SM (31)           | Local Write |
| ACTUATOR_SM (33)           | Local Read  |
| ACTUATOR_SM (35)           | Local Write |
| ACTUATOR_SM (37)           | Local Read  |
| ACTUATOR_SM (39)           | Local Write |
| ACTUATOR_SM (42)           | Local Write |
| ACTUATOR_SM (46)           | Local Read  |
| ACTUATOR_SM (48)           | Local Write |
| ACTUATOR_SM (50)           | Local Read  |
| ACTUATOR_SM (52)           | Local Write |
| ACTUATOR_SM (55)           | Local Read  |
| ACTUATOR_SM (57)           | Local Write |
| ACTUATOR_SM (59)           | Local Read  |
| ACTUATOR_SM (61)           | Local Write |
| ACTUATOR_SM (64)           | Local Read  |
| ACTUATOR_SM (65)           | Local Write |
| ACTUATOR_SM (67)           | Local Read  |
| ACTUATOR_SM (69)           | Local Write |
| ACTUATOR_SM (72)           | Local Read  |
| ACTUATOR_SM (74)           | Local Write |
| ACTUATOR_SM (76)           | Local Read  |
| ACTUATOR_SM (78)           | Local Write |
| ACTUATOR_SM (81)           | Local Read  |
| ACTUATOR_SM (83)           | Local Write |
| ACTUATOR_SM (85)           | Local Read  |
| ACTUATOR_SM (87)           | Local Write |
| ACTUATOR_SM (90)           | Local Read  |
| ACTUATOR_SM (92)           | Local Read  |
| ACTUATOR_SM (94)           | Local Read  |
| ACTUATOR_SM (96)           | Local Write |
| ACTUATOR_SM (99)           | Local Write |
| ACTUATOR_SM (103)          | Local Read  |
| ACTUATOR_SM (105)          | Local Read  |
| ACTUATOR_SM (111)          | Local Write |

|                            |             |
|----------------------------|-------------|
| ACTUATOR_SM (116)          | Local Write |
| ACTUATOR_SM (120)          | Local Read  |
| ACTUATOR_SM (122)          | Local Read  |
| ACTUATOR_SM (125)          | Local Write |
| ACTUATOR_SM (128)          | Local Read  |
| ACTUATOR_SM (130)          | Local Read  |
| ACTUATOR_SM (132)          | Local Read  |
| ACTUATOR_SM (136)          | Local Write |
| ACTUATOR_SM (140)          | Local Write |
| ACTUATOR_SM (145)          | Local Write |
| ACTUATOR_SM (146)          | Local Write |
| ACTUATOR_SM.CONNECT (6)    | Local Read  |
| ACTUATOR_SM.CONNECT (6)    | Local Write |
| ACTUATOR_SM.CONNECT (9)    | Local Write |
| ACTUATOR_SM.CONNECT (25)   | Local Write |
| ACTUATOR_SM.CONNECT (25)   | Local Read  |
| ACTUATOR_SM.CONNECT (25)   | Local Write |
| ACTUATOR_SM.CONNECT (25)   | Local Read  |
| ACTUATOR_SM.CONNECT (25)   | Local Write |
| ACTUATOR_SM.CONNECT (28)   | Local Read  |
| ACTUATOR_SM.CONNECT (31)   | Local Write |
| ACTUATOR_SM.CONNECT (32)   | Local Write |
| ACTUATOR_SM.DRG1_W... (5)  | Local Read  |
| ACTUATOR_SM.DRG1_W... (6)  | Local Write |
| ACTUATOR_SM.DRG1_W... (7)  | Local Write |
| ACTUATOR_SM.DRG1_W... (26) | Local Write |
| ACTUATOR_SM.DRG1_W... (26) | Local Read  |
| ACTUATOR_SM.DRG1_W... (26) | Local Write |
| ACTUATOR_SM.DRG1_W... (26) | Local Read  |
| ACTUATOR_SM.DRG1_W... (26) | Local Write |
| ACTUATOR_SM.DRG1_W... (26) | Local Read  |
| ACTUATOR_SM.DRG1_W... (26) | Local Write |
| ACTUATOR_SM.DRG1_W... (29) | Local Read  |
| ACTUATOR_SM.DRG1_W... (32) | Local Write |
| ACTUATOR_SM.DRG1_W... (33) | Local Write |
| ACTUATOR_SM.DRG1_W... (34) | Local Write |
| ACTUATOR_SM.DRG1_W... (35) | Local Write |
| ACTUATOR_SM.DRG1_W... (36) | Local Read  |
| ACTUATOR_SM.DRG1_W... (37) | Local Write |
| ACTUATOR_SM.DRG1_W... (38) | Local Write |
| ACTUATOR_SM.DRG1_W... (40) | Local Write |
| ACTUATOR_SM.PCMD_W... (5)  | Local Read  |
| ACTUATOR_SM.PCMD_W... (6)  | Local Write |
| ACTUATOR_SM.PCMD_W... (7)  | Local Write |
| ACTUATOR_SM.PCMD_W... (8)  | Local Write |
| ACTUATOR_SM.PCMD_W... (27) | Local Write |
| ACTUATOR_SM.PCMD_W... (27) | Local Read  |
| ACTUATOR_SM.PCMD_W... (27) | Local Write |
| ACTUATOR_SM.PCMD_W... (27) | Local Read  |
| ACTUATOR_SM.PCMD_W... (27) | Local Write |
| ACTUATOR_SM.PCMD_W... (30) | Local Read  |
| ACTUATOR_SM.PCMD_W... (33) | Local Write |
| ACTUATOR_SM.PCMD_W... (34) | Local Write |
| ACTUATOR_SM.PCMD_W... (35) | Local Write |
| ACTUATOR_SM.PCMD_W... (36) | Local Write |
| ACTUATOR_SM.PCMD_W... (37) | Local Read  |
| ACTUATOR_SM.PCMD_W... (38) | Local Write |
| ACTUATOR_SM.PCMD_W... (39) | Local Write |
| ACTUATOR_SM.PCMD_W... (41) | Local Write |
| ACTUATOR_SM.STATUS... (5)  | Local Read  |
| ACTUATOR_SM.STATUS... (6)  | Local Write |
| ACTUATOR_SM.STATUS... (7)  | Local Write |
| ACTUATOR_SM.STATUS... (26) | Local Write |
| ACTUATOR_SM.STATUS... (26) | Local Read  |
| ACTUATOR_SM.STATUS... (26) | Local Write |
| ACTUATOR_SM.STATUS... (26) | Local Read  |
| ACTUATOR_SM.STATUS... (26) | Local Write |
| ACTUATOR_SM.STATUS... (26) | Local Read  |
| ACTUATOR_SM.STATUS... (26) | Local Write |



|                            |              |
|----------------------------|--------------|
| ACTUATOR_SM.STATUS... (29) | Local Read   |
| ACTUATOR_SM.STATUS... (32) | Local Write  |
| ACTUATOR_SM.STATUS... (33) | Local Write  |
| ACTUATOR_SM.STATUS... (34) | Local Write  |
| ACTUATOR_SM.STATUS... (35) | Local Write  |
| ACTUATOR_SM.STATUS... (36) | Local Read   |
| ACTUATOR_SM.STATUS... (37) | Local Read   |
| ACTUATOR_SM.STATUS... (38) | Local Read   |
| ACTUATOR_SM.STATUS... (39) | Local Read   |
| ACTUATOR_SM.STATUS... (40) | Local Write  |
| ACTUATOR_SM.STATUS... (41) | Local Write  |
| ACTUATOR_SM.STATUS... (43) | Local Write  |
| _global_init (6)           | Local Read   |
| LLV211_CSD                 |              |
| PLC_PRG.ES_SM (33)         | Local Read   |
| PLC_PRG.LL_SM (32)         | Local Read   |
| PLC_PRG.PROCESS_IN... (77) | Local Write  |
| PLC_PRG.SC_OUTPUTS (88)    | Local Read   |
| PLC_PRG.VALVES (37)        | Local Read   |
| PLC_PRG.VALVES (47)        | Local Read   |
| PLC_PRG.VALVES (54)        | Local Read   |
| PLC_PRG.VALVES (62)        | Local Read   |
| PLC_PRG.VALVES (70)        | Local Read   |
| PLC_PRG.VALVES (80)        | Local Read   |
| PLC_PRG.VALVES (86)        | Local Read   |
| PLC_PRG.VALVES (94)        | Local Read   |
| PLC_PRG.VALVES (102)       | Local Read   |
| PLC_PRG.VALVES (112)       | Local Read   |
| _global_init (210)         | Local Write  |
| DO_V201_OPEN_CMD%QX0.3     |              |
| PLC_PRG.PROCESS_IN... (36) | Global Read  |
| PLC_PRG.PROCESS_IN... (37) | Global Read  |
| PLC_PRG.PROCESS_OU... (6)  | Global Write |
| _global_init (8)           | Global Write |
| LL_BP211_ON                |              |
| PLC_PRG.FAULT_LOGIC (17)   | Local Read   |
| PLC_PRG.FAULT_LOGIC (17)   | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   | Local Read   |
| PLC_PRG.PUMPS (22)         | Local Read   |
| PLC_PRG.PUMPS (30)         | Local Read   |
| PLC_PRG.SC_OUTPUTS (146)   | Local Read   |
| PLC_PRG.VALVES (78)        | Local Read   |
| PLC_PRG.VALVES (110)       | Local Read   |
| _global_init (242)         | Local Write  |
| DO_V101_OPEN_CMD%QX0.2     |              |
| PLC_PRG.PROCESS_IN... (33) | Global Read  |
| PLC_PRG.PROCESS_IN... (34) | Global Read  |
| PLC_PRG.PROCESS_OU... (5)  | Global Write |
| _global_init (7)           | Global Write |
| DI_TPV211_OPEN%IX18.8      |              |
| PLC_PRG.PROCESS_IN... (58) | Global Read  |
| DI_PE2111_PSL%IX16.7       |              |
| PLC_PRG.PROCESS_IN... (10) | Global Read  |
| PLC_PRG.SC_OUTPUTS (14)    | Global Read  |
| DI_PE2110_PSL%IX16.6       |              |
| PLC_PRG.PROCESS_IN... (9)  | Global Read  |
| PLC_PRG.SC_OUTPUTS (13)    | Global Read  |
| not_symbol                 |              |
| PLC_PRG.SC_OUTPUTS (93)    | Local Read   |
| VALVE_BI_FB (11)           | Local Write  |
| VALVE_BI_FBinit (9)        | Local Write  |
| cYAG                       |              |
| PLC_PRG.BR_SM (125)        | Local Read   |
| PLC_PRG.BR_SM (143)        | Local Read   |
| _global_init (6)           | Local Write  |
| not_symbol                 |              |
| PLC_PRG.SC_OUTPUTS (121)   | Local Read   |
| TP_FB (6)                  | Local Write  |
| TP_FBinit (7)              | Local Write  |
| DO_TP211_ON_CMD%QX0.8      |              |
| PLC_PRG.PROCESS_IN... (62) | Global Read  |
| PLC_PRG.PROCESS_OU... (12) | Global Write |
| _global_init (13)          | Global Write |

|                            |  |              |
|----------------------------|--|--------------|
| LL211_LID_CLOSED           |  |              |
| PLC_PRG.PROCESS_IN... (79) |  | Local Write  |
| _global_init (226)         |  | Local Write  |
| DO_SPARE_30%QX1.13         |  |              |
| _global_init (34)          |  | Global Write |
| DO_RP2111_ON_CMD%QX0.1     |  |              |
| PLC_PRG.PROCESS_OU... (4)  |  | Global Write |
| _global_init (6)           |  | Global Write |
| LLV211_OPN                 |  |              |
| PLC_PRG.PROCESS_IN... (76) |  | Local Write  |
| PLC_PRG.SC_OUTPUTS (87)    |  | Local Read   |
| _global_init (209)         |  | Local Write  |
| DO_SPARE_26%QX1.9          |  |              |
| _global_init (30)          |  | Global Write |
| DO_RP2110_ON_CMD%QX0.0     |  |              |
| PLC_PRG.PROCESS_OU... (3)  |  | Global Write |
| _global_init (5)           |  | Global Write |
| LL_PE211_PIY_OK            |  |              |
| PLC_PRG.ES_SM (4)          |  | Local Read   |
| PLC_PRG.ES_SM (19)         |  | Local Read   |
| PLC_PRG.FAULT_LOGIC (14)   |  | Local Read   |
| PLC_PRG.FAULT_LOGIC (14)   |  | Local Write  |
| PLC_PRG.FAULT_LOGIC (37)   |  | Local Read   |
| PLC_PRG.SC_OUTPUTS (144)   |  | Local Read   |
| PLC_PRG.VALVES (78)        |  | Local Read   |
| _global_init (240)         |  | Local Write  |
| DO_SPARE_25%QX1.8          |  |              |
| _global_init (29)          |  | Global Write |
| DO_SPARE_14%QX0.13         |  |              |
| _global_init (18)          |  | Global Write |
| DI_PE203_PIY_OK%IX16.8     |  |              |
| PLC_PRG.PROCESS_IN... (12) |  | Global Read  |
| PLC_PRG.PROCESS_IN... (13) |  | Global Read  |
| PLC_PRG.PROCESS_IN... (14) |  | Global Read  |
| PLC_PRG.SC_OUTPUTS (16)    |  | Global Read  |
| DO_TP212_ON_CMD%QX1.0      |  |              |
| PLC_PRG.PROCESS_IN... (74) |  | Global Read  |
| PLC_PRG.PROCESS_OU... (21) |  | Global Write |
| _global_init (21)          |  | Global Write |
| DO_RPV211_OPEN_CMD%QX0.10  |  |              |
| PLC_PRG.PROCESS_IN... (55) |  | Global Read  |
| PLC_PRG.PROCESS_IN... (56) |  | Global Read  |
| PLC_PRG.PROCESS_OU... (14) |  | Global Write |
| _global_init (15)          |  | Global Write |
| DI_PE211_PSL_HI%IX17.0     |  |              |
| PLC_PRG.PROCESS_IN... (19) |  | Global Read  |
| PLC_PRG.SC_OUTPUTS (23)    |  | Global Read  |
| DI_PE202_PSL_LO%IX16.2     |  |              |
| PLC_PRG.PROCESS_IN... (5)  |  | Global Read  |
| DI_PE101_PSL_LO%IX16.0     |  |              |
| PLC_PRG.PROCESS_IN... (3)  |  | Global Read  |
| cSINS02                    |  |              |
| PLC_PRG.BR_SM (53)         |  | Local Read   |
| PLC_PRG.BR_SM (71)         |  | Local Read   |
| _global_init (4)           |  | Local Write  |
| cVERSION_MINOR             |  |              |
| PLC_PRG.SC_OUTPUTS (157)   |  | Local Read   |
| _global_init (2)           |  | Local Write  |
| close_intlk                |  |              |
| PLC_PRG.VALVES (47)        |  | Local Write  |
| VALVE_BI_FB (8)            |  | Local Read   |
| VALVE_BI_FB (11)           |  | Local Read   |
| VALVE_BI_FBinit (3)        |  | Local Write  |
| not_symbol                 |  |              |
| RP_FB (4)                  |  | Local Write  |
| RP_FBinit (6)              |  | Local Write  |
| DI_V203_OPEN%IX18.0        |  |              |
| PLC_PRG.PROCESS_IN... (42) |  | Global Read  |
| DI_V100_OPEN%IX17.8        |  |              |
| PLC_PRG.PROCESS_IN... (30) |  | Global Read  |
| DI_TP212_AT_SPEED%IX19.0   |  |              |
| PLC_PRG.PROCESS_IN... (74) |  | Global Read  |
| DI_PE203_PSL_MIDHI%IX16.13 |  |              |

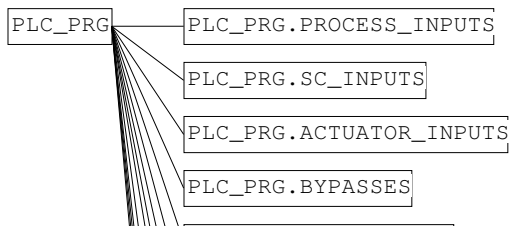
|                               |             |
|-------------------------------|-------------|
| PLC_PRG.PROCESS_IN... (14)    | Global Read |
| PLC_PRG.SC_OUTPUTS (18)       | Global Read |
| DI_PE201_PSL_LO%IX16.1        |             |
| PLC_PRG.PROCESS_IN... (4)     | Global Read |
| DI_PE101_PSL_LO%IX16.0        |             |
| PLC_PRG.PROCESS_IN... (3)     | Global Read |
| DI_LL211_LID_CLOSED%IX19.4    |             |
| PLC_PRG.PROCESS_IN... (79)    | Global Read |
| PLC_PRG.SC_OUTPUTS (34)       | Global Read |
| DI_LL211_ARM_RETRACTED%IX19.5 |             |
| PLC_PRG.PROCESS_IN... (80)    | Global Read |
| PLC_PRG.SC_OUTPUTS (35)       | Global Read |
| cVERSION_MAJOR                |             |
| PLC_PRG.SC_OUTPUTS (156)      | Local Read  |
| _global_init (1)              | Local Write |
| cSINS03                       |             |
| PLC_PRG.BR_SM (89)            | Local Read  |
| PLC_PRG.BR_SM (107)           | Local Read  |
| _global_init (5)              | Local Write |
| count2                        |             |
| PLC_PRG.ACTUATOR_I... (6)     | Local Write |
| PLC_PRG.ACTUATOR_I... (6)     | Local Read  |
| PLC_PRG.ACTUATOR_I... (7)     | Local Read  |
| PLC_PRG.ACTUATOR_I... (8)     | Local Read  |
| PLC_PRG.ACTUATOR_I... (11)    | Local Read  |
| PLC_PRG.ACTUATOR_I... (11)    | Local Write |
| _global_init (168)            | Local Write |
| count                         |             |
| _global_init (167)            | Local Write |
| cSINS01                       |             |
| PLC_PRG.BR_SM (19)            | Local Read  |
| PLC_PRG.BR_SM (36)            | Local Read  |
| _global_init (3)              | Local Write |
| close_req                     |             |
| PLC_PRG.VALVES (50)           | Local Write |
| VALVE_BI_FB (4)               | Local Read  |
| VALVE_BI_FB (8)               | Local Read  |
| VALVE_BI_FBinit (6)           | Local Write |
| close_ena                     |             |
| PLC_PRG.SC_OUTPUTS (44)       | Local Read  |
| PLC_PRG.SC_OUTPUTS (52)       | Local Read  |
| PLC_PRG.SC_OUTPUTS (64)       | Local Read  |
| PLC_PRG.SC_OUTPUTS (72)       | Local Read  |
| PLC_PRG.VALVES (6)            | Local Write |
| PLC_PRG.VALVES (14)           | Local Write |
| PLC_PRG.VALVES (22)           | Local Write |
| PLC_PRG.VALVES (30)           | Local Write |
| PLC_PRG.VALVES (38)           | Local Write |
| PLC_PRG.VALVES (56)           | Local Write |
| PLC_PRG.VALVES (64)           | Local Write |
| PLC_PRG.VALVES (72)           | Local Write |
| PLC_PRG.VALVES (80)           | Local Write |
| PLC_PRG.VALVES (88)           | Local Write |
| PLC_PRG.VALVES (96)           | Local Write |
| PLC_PRG.VALVES (104)          | Local Write |
| PLC_PRG.VALVES (112)          | Local Write |
| VALVE_FB (3)                  | Local Read  |
| VALVE_FB (6)                  | Local Read  |
| VALVE_FBinit (3)              | Local Write |
| close_ena                     |             |
| PLC_PRG.SC_OUTPUTS (90)       | Local Read  |
| PLC_PRG.VALVES (48)           | Local Write |
| VALVE_BI_FB (4)               | Local Read  |
| VALVE_BI_FB (8)               | Local Read  |
| VALVE_BI_FB (11)              | Local Read  |
| VALVE_BI_FBinit (4)           | Local Write |
| cBR_SELECTOR_UL               |             |
| _global_init (7)              | Local Write |
| AI_PE212_LO_PIY%IW9           |             |
| PLC_PRG.SC_OUTPUTS (168)      | Global Read |
| AI_PE212_LO_PIY%IW9           |             |
| PLC_PRG.SC_OUTPUTS (168)      | Global Read |
| close_cmd                     |             |

|                       |       |        |       |
|-----------------------|-------|--------|-------|
| PLC_PRG.PROCESS_OU... | (19)  | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (92)  | Local  | Read  |
| VALVE_BI_FB           | (8)   | Local  | Read  |
| VALVE_BI_FB           | (8)   | Local  | Write |
| VALVE_BI_FB           | (11)  | Local  | Read  |
| VALVE_BI_FBinit       | (8)   | Local  | Write |
| AI_PE212_HI_Piy%IW8   |       |        |       |
| PLC_PRG.SC_OUTPUTS    | (167) | Global | Read  |
| AI_PE212_HI_Piy%IW8   |       |        |       |
| PLC_PRG.SC_OUTPUTS    | (167) | Global | Read  |
| BR_STATE              |       |        |       |
| PLC_PRG.BR_SM         | (5)   | Local  | Write |
| PLC_PRG.BR_SM         | (9)   | Local  | Read  |
| PLC_PRG.BR_SM         | (14)  | Local  | Write |
| PLC_PRG.BR_SM         | (17)  | Local  | Read  |
| PLC_PRG.BR_SM         | (23)  | Local  | Write |
| PLC_PRG.BR_SM         | (25)  | Local  | Write |
| PLC_PRG.BR_SM         | (27)  | Local  | Write |
| PLC_PRG.BR_SM         | (29)  | Local  | Write |
| PLC_PRG.BR_SM         | (31)  | Local  | Write |
| PLC_PRG.BR_SM         | (34)  | Local  | Read  |
| PLC_PRG.BR_SM         | (40)  | Local  | Write |
| PLC_PRG.BR_SM         | (42)  | Local  | Write |
| PLC_PRG.BR_SM         | (44)  | Local  | Write |
| PLC_PRG.BR_SM         | (46)  | Local  | Write |
| PLC_PRG.BR_SM         | (48)  | Local  | Write |
| PLC_PRG.BR_SM         | (51)  | Local  | Read  |
| PLC_PRG.BR_SM         | (57)  | Local  | Write |
| PLC_PRG.BR_SM         | (60)  | Local  | Write |
| PLC_PRG.BR_SM         | (62)  | Local  | Write |
| PLC_PRG.BR_SM         | (64)  | Local  | Write |
| PLC_PRG.BR_SM         | (66)  | Local  | Write |
| PLC_PRG.BR_SM         | (69)  | Local  | Read  |
| PLC_PRG.BR_SM         | (75)  | Local  | Write |
| PLC_PRG.BR_SM         | (77)  | Local  | Write |
| PLC_PRG.BR_SM         | (79)  | Local  | Write |
| PLC_PRG.BR_SM         | (81)  | Local  | Write |
| PLC_PRG.BR_SM         | (83)  | Local  | Write |
| PLC_PRG.BR_SM         | (87)  | Local  | Read  |
| PLC_PRG.BR_SM         | (93)  | Local  | Write |
| PLC_PRG.BR_SM         | (96)  | Local  | Write |
| PLC_PRG.BR_SM         | (98)  | Local  | Write |
| PLC_PRG.BR_SM         | (100) | Local  | Write |
| PLC_PRG.BR_SM         | (102) | Local  | Write |
| PLC_PRG.BR_SM         | (105) | Local  | Read  |
| PLC_PRG.BR_SM         | (111) | Local  | Write |
| PLC_PRG.BR_SM         | (113) | Local  | Write |
| PLC_PRG.BR_SM         | (115) | Local  | Write |
| PLC_PRG.BR_SM         | (117) | Local  | Write |
| PLC_PRG.BR_SM         | (119) | Local  | Write |
| PLC_PRG.BR_SM         | (123) | Local  | Read  |
| PLC_PRG.BR_SM         | (129) | Local  | Write |
| PLC_PRG.BR_SM         | (132) | Local  | Write |
| PLC_PRG.BR_SM         | (134) | Local  | Write |
| PLC_PRG.BR_SM         | (136) | Local  | Write |
| PLC_PRG.BR_SM         | (138) | Local  | Write |
| PLC_PRG.BR_SM         | (141) | Local  | Read  |
| PLC_PRG.BR_SM         | (147) | Local  | Write |
| PLC_PRG.BR_SM         | (149) | Local  | Write |
| PLC_PRG.BR_SM         | (151) | Local  | Write |
| PLC_PRG.BR_SM         | (153) | Local  | Write |
| PLC_PRG.BR_SM         | (155) | Local  | Write |
| PLC_PRG.BR_SM         | (159) | Local  | Write |
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| PLC_PRG.SC_OUTPUTS    | (48)  | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (220) | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (222) | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (225) | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (228) | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (231) | Local  | Read  |
| PLC_PRG.SC_OUTPUTS    | (234) | Local  | Read  |
| _global_init          | (288) | Local  | Write |
| AI_PE211_LO_Piy%IW7   |       |        |       |

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| PLC_PRG.SC_OUTPUTS (166)  | Global Read |
| AI_PE211_HI_PII%IW6       |             |
| PLC_PRG.SC_OUTPUTS (165)  | Global Read |
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| PLC_PRG.PROCESS_OU... (4) | Local Read  |
| PLC_PRG.PUMPS (4)         | Local Write |
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| _global_init (310)        | Local Write |
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| AI_PE203_LO_PII%IW5       |             |
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| AI_PE203_LO_PII%IW5       |             |
| PLC_PRG.SC_OUTPUTS (164)  | Global Read |
| AI_PE203_HI_PII%IW4       |             |
| PLC_PRG.SC_OUTPUTS (163)  | Global Read |
| AI_PE203_HI_PII%IW4       |             |
| PLC_PRG.SC_OUTPUTS (163)  | Global Read |
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| PLC_PRG.BR_SM (26)        | Local Read  |
| PLC_PRG.BR_SM (28)        | Local Read  |
| PLC_PRG.BR_SM (30)        | Local Read  |
| PLC_PRG.BR_SM (39)        | Local Read  |
| PLC_PRG.BR_SM (41)        | Local Read  |
| PLC_PRG.BR_SM (43)        | Local Read  |
| PLC_PRG.BR_SM (45)        | Local Read  |
| PLC_PRG.BR_SM (47)        | Local Read  |
| PLC_PRG.BR_SM (59)        | Local Read  |
| PLC_PRG.BR_SM (61)        | Local Read  |
| PLC_PRG.BR_SM (63)        | Local Read  |
| PLC_PRG.BR_SM (65)        | Local Read  |
| PLC_PRG.BR_SM (74)        | Local Read  |
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| PLC_PRG.BR_SM (78)        | Local Read  |
| PLC_PRG.BR_SM (80)        | Local Read  |
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| PLC_PRG.BR_SM (101)       | Local Read  |
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| PLC_PRG.BR_SM (133)       | Local Read  |
| PLC_PRG.BR_SM (135)       | Local Read  |
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| PLC_PRG.BR_SM (146)       | Local Read  |
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| PLC_PRG.BR_SM (150)       | Local Read  |
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| PLC_PRG.BR_SM (154)       | Local Read  |
| PLC_PRG.SC_INPUTS (25)    | Local Write |
| PLC_PRG.SC_INPUTS (27)    | Local Write |
| PLC_PRG.SC_INPUTS (29)    | Local Write |
| PLC_PRG.SC_INPUTS (31)    | Local Write |
| PLC_PRG.SC_INPUTS (33)    | Local Write |
| PLC_PRG.SC_INPUTS (35)    | Local Write |
| PLC_PRG.SC_OUTPUTS (172)  | Local Read  |
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| PLC_PRG.SC_OUTPUTS (178)  | Local Read  |
| PLC_PRG.SC_OUTPUTS (180)  | Local Read  |
| _global_init (289)        | Local Write |
| AI_PE202_PII%IW2          |             |
| PLC_PRG.SC_OUTPUTS (162)  | Global Read |
| AI_PE202_PII%IW2          |             |
| PLC_PRG.SC_OUTPUTS (162)  | Global Read |

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| AI_PE201_PIIY%IW1  | PLC_PRG.SC_OUTPUTS (161)   | Global Read |
| AI_PE201_PIIY%IW1  | PLC_PRG.SC_OUTPUTS (161)   | Global Read |
| BP211_ON           | PLC_PRG.FAULT_LOGIC (17)   | Local Read  |
|                    | PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
|                    | PLC_PRG.PROCESS_IN... (8)  | Local Write |
|                    | PLC_PRG.SC_OUTPUTS (109)   | Local Read  |
|                    | _global_init (225)         | Local Write |
| AI_PE101_PIIY%IW0  | PLC_PRG.SC_OUTPUTS (160)   | Global Read |
| AI_PE101_PIIY%IW0  | PLC_PRG.SC_OUTPUTS (160)   | Global Read |
| BP211_PSL          | PLC_PRG.PROCESS_IN... (10) | Local Write |
|                    | PLC_PRG.SC_OUTPUTS (147)   | Local Read  |
|                    | _global_init (190)         | Local Write |
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|                    | PLC_PRG.BYPASSES (3)       | Local Write |
|                    | PLC_PRG.FAULT_LOGIC (3)    | Local Read  |
|                    | PLC_PRG.FAULT_LOGIC (37)   | Local Read  |
|                    | _global_init (248)         | Local Write |
| awStatus           | ACTUATOR_SM (25)           | Local Read  |
|                    | ACTUATOR_SM (29)           | Local Read  |
|                    | ACTUATOR_SM (33)           | Local Read  |
|                    | ACTUATOR_SM (37)           | Local Read  |
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|                    | ACTUATOR_SM (132)          | Local Read  |
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|                    | PLC_PRG.BR_SM (19)         | Local Write |
|                    | PLC_PRG.BR_SM (22)         | Local Read  |
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|                    | PLC_PRG.BR_SM (53)         | Local Write |
|                    | PLC_PRG.BR_SM (56)         | Local Read  |
|                    | PLC_PRG.BR_SM (71)         | Local Write |
|                    | PLC_PRG.BR_SM (89)         | Local Write |
|                    | PLC_PRG.BR_SM (92)         | Local Read  |
|                    | PLC_PRG.BR_SM (107)        | Local Write |
|                    | PLC_PRG.BR_SM (125)        | Local Write |
|                    | PLC_PRG.BR_SM (128)        | Local Read  |
|                    | PLC_PRG.BR_SM (143)        | Local Write |
|                    | _global_init (247)         | Local Write |
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|                    | PLC_PRG.ACTUATOR_I... (13) | Local Write |
|                    | PLC_PRG.BR_SM (22)         | Local Read  |
|                    | PLC_PRG.BR_SM (56)         | Local Read  |
|                    | PLC_PRG.BR_SM (92)         | Local Read  |
|                    | PLC_PRG.BR_SM (128)        | Local Read  |
|                    | _global_init (246)         | Local Write |
| a_num              | _global_init (169)         | Local Write |

Call Tree of PLC\_PRG (PRG-ST)



PLC\_PRG.FAULT\_LOGIC

PLC\_PRG.BR\_SM

PLC\_PRG.ES\_SM

PLC\_PRG.LL\_SM

PLC\_PRG.PUMPS

RP\_FB

TP\_FB

PLC\_PRG.VALVES

VALVE\_FB

VALVE\_BI\_FB

PLC\_PRG.ACTUATOR\_OUTPUTS

PLC\_PRG.SC\_OUTPUTS

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