PROGRAM PLC\_PRG

VAR

CODE3 : Code3 ; //instance of Code3

ssMethodType\_INPUT :SINT ;

IN1 : LREAL ;

END\_VAR

ssMethodType\_INPUT := 1 ;

IN1 := 10 ;

CODE3 (ssMethodType := ssMethodType\_INPUT, In1 := IN1);

FUNCTION\_BLOCK Code3

VAR\_INPUT

ssMethodType: SINT;

In1: LREAL;

END\_VAR

VAR\_OUTPUT

y: LREAL;

END\_VAR

VAR

INPUTSTOINDEX3 : InputsToIndex3; //instance of InputsToIndex3

Square: LREAL;

Filter\_DSTATE: LREAL;

Integrator\_DSTATE: LREAL;

rtb\_Subtract: LREAL;

rtb\_FilterCoefficient: LREAL;

END\_VAR

CASE ssMethodType OF

GVL\_CONSTS.SS\_INITIALIZE:

(\* SystemInitialize for Atomic SubSystem: '<Root>/Code 2' \*)

(\* InitializeConditions for DiscreteIntegrator: '<S29>/Filter' \*)

Filter\_DSTATE := 0.0;

(\* InitializeConditions for DiscreteIntegrator: '<S34>/Integrator' \*)

Integrator\_DSTATE := 0.0;

(\* End of SystemInitialize for SubSystem: '<Root>/Code 2' \*)

(\* ConstCode for Atomic SubSystem: '<Root>/Code 2' \*)

(\* ConstCode for Math: '<S1>/Square' incorporates:

\* Constant: '<S1>/Constant' \*)

Square := 458751.02394617227;

(\* End of ConstCode for SubSystem: '<Root>/Code 2' \*)

GVL\_CONSTS.SS\_STEP:

(\* Outputs for Atomic SubSystem: '<Root>/Code 2' \*)

(\* Sum: '<S1>/Subtract' incorporates:

\* Math: '<S1>/Square1' \*)

INPUTSTOINDEX3(Input1:= In1);

rtb\_Subtract := Square - (In1 \* In1);

(\* Gain: '<S37>/Filter Coefficient' incorporates:

\* DiscreteIntegrator: '<S29>/Filter'

\* Gain: '<S28>/Derivative Gain'

\* Sum: '<S29>/SumD' \*)

rtb\_FilterCoefficient := ((0.10932922971946307 \* rtb\_Subtract) - Filter\_DSTATE) \* 3.8620401712747761;

(\* Outport: '<Root>/y' incorporates:

\* DiscreteIntegrator: '<S34>/Integrator'

\* Gain: '<S39>/Proportional Gain'

\* Sum: '<S43>/Sum' \*)

y := ((2.5899754807860003 \* rtb\_Subtract) + Integrator\_DSTATE) + rtb\_FilterCoefficient;

(\* Update for DiscreteIntegrator: '<S29>/Filter' \*)

Filter\_DSTATE := (5.0E-6 \* rtb\_FilterCoefficient) + Filter\_DSTATE;

(\* Update for DiscreteIntegrator: '<S34>/Integrator' incorporates:

\* Gain: '<S31>/Integral Gain' \*)

Integrator\_DSTATE := ((19.365373103211319 \* rtb\_Subtract) \* 5.0E-6) + Integrator\_DSTATE;

(\* End of Outputs for SubSystem: '<Root>/Code 2' \*)

END\_CASE;

FUNCTION\_BLOCK InputsToIndex3

VAR\_INPUT

Input1 : LREAL ;

END\_VAR

VAR\_OUTPUT

Array\_ : ARRAY [1..100] OF LREAL ;

END\_VAR

VAR

Index1 : LREAL ;

Index2 : DINT ;

i : DINT;

END\_VAR

Index1 := SQRT(Input1);

Index2 := LREAL\_TO\_DINT (Index1);

FOR i:= 0 TO Index2 DO

Array\_[i] := Index2 + i ;

END\_FOR