(\* Following taken directly from the IEC 61131.3 draft standard \*)

(\*

\* An IEC 61131-3 IL and ST compiler.

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\* Based on the

\* FINAL DRAFT - IEC 61131-3, 2nd Ed. (2001-12-10)

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\*)

FUNCTION\_BLOCK DERIVATIVE

VAR\_INPUT

RUN : BOOL ; (\* 0 = reset \*)

XIN : REAL ; (\* Input to be differentiated \*)

CYCLE : TIME ; (\* Sampling period \*)

END\_VAR

VAR\_OUTPUT

XOUT : REAL ; (\* Differentiated output \*)

END\_VAR

VAR X1, X2, X3 : REAL ; END\_VAR

IF RUN THEN

XOUT := (3.0 \* (XIN - X3) + X1 - X2)

/ (10.0 \* TIME\_TO\_REAL(CYCLE)) ;

X3 := X2 ; X2 := X1 ; X1 := XIN ;

ELSE XOUT := 0.0; X1 := XIN ; X2 := XIN ; X3 := XIN ;

END\_IF ;

END\_FUNCTION\_BLOCK