

LimiterWithAlarm()

Limits an input signal (IN) within specified minimum and maximum bounds. If the signal exceeds the limits for a defined number of consecutive cycles, an alarm is triggered.

Inputs:

IN : REAL The input signal to be monitored and limited.

MIN_LIMIT : REAL The minimum allowable value for the input signal.

MAX_LIMIT : REAL The maximum allowable value for the input signal.

ENABLE : BOOL Enables or disables the limiter and alarm logic. When disabled, the input passes through unmodified and no alarm is triggered.

ALARM_THRESHOLD : INT Number of consecutive cycles outside the limit range required to activate the alarm.

Outputs:

OUT : REAL The output signal, limited within the range [MIN_LIMIT, MAX_LIMIT] if enabled.

ALARM : BOOL Set to TRUE if the input exceeds the limits for ALARM_THRESHOLD consecutive cycles.

Internal Variables:

AlarmCounter : INT Counts the number of consecutive cycles in which the input is out of bounds.