The SignalIntegrator function block performs discrete-time signal integration, with support for enabling/disabling, resetting, integration limiting, and saturation detection.

Inputs

Name Type Description

IN REAL The input signal to be integrated.

DT_STEP REAL Time step per scan cycle (e.g., in seconds).

ENABLE BOOL Enables integration when TRUE.

RESET BOOL Resets the integrator to zero when TRUE.

MAX_ACCUM REAL Maximum absolute value the integrator can accumulate (anti-windup).

DELTA_LIMIT REAL Maximum absolute value allowed for a single integration step (rate limiting).

Outputs

Name Type Description

OUT REAL Current integrated output value.

DELTA REAL Value added to the accumulator during this cycle (after limiting).

SATURATED BOOL TRUE if the accumulator has reached ±MAX_ACCUM saturation.

Internal Variables

Name Type Description

Accumulated REAL The running sum of the integrated signal.

StepValue REAL Raw computed step before limiting (IN * DT_STEP).

LimitedDelta REAL Clamped version of StepValue respecting DELTA_LIMIT.