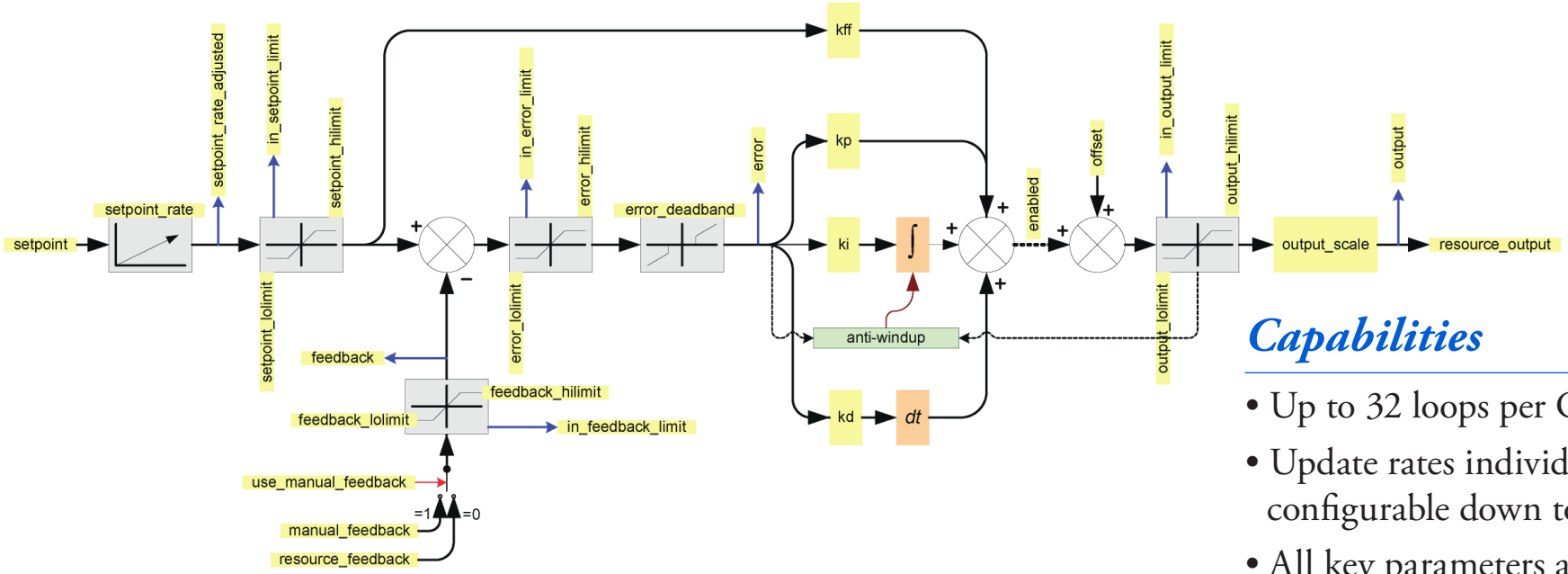
Control Technology Corp.

PID Loops in QuickBuilder

QuickBuilder: PID Loops as Independent, but Integrated Functions

PID loops may be configured in QuickBuilder to run in the background, independent of the main program flow. The controller program still has complete access to all PID parameters for tuning and setpoint adjustment.



PID Loop Properties

resource_feedback, resource_output - these specify the controller resources (analog I/O, registers, etc.) to use for input and output.

manual_feedback, use_manual_feedback - allows for alternative feedback source.

kp, ki, kd, kff - the proportional, integral, derivative and feedforward gain parameters.

integrator_unwind_constant - supports self-discharge of integrator.

derivative_form - supports additional D after PID loop.

tick_multiplier - determines update rate.

enabled - activates/de-activates PID loop.

setpoint, setpoint_hilimit, setpoint_lolimit, setpoint_rate - initial setpoint value and limits.

feedback_hilimit, feedback_lolimit - limits range of feedback applied to loop.

error_deadband, error_hilimit, error_lowlimit - controls behavior of error signal.

output_hilimit, output_lolimit, output_scale, offset - controls behavior of output signal.

Capabilities

- Up to 32 loops per CPU.
- Update rates individually configurable down to 1 mS.
- All key parameters are programmatically tunable.
- 64-bit floating point calculations, with 200 nS timing accuracy for improved response.
- Programmable deadband.

More Information

- **QuickBuilder Reference Guide**