6 Counters, Triggers & Timers

Hardware manual

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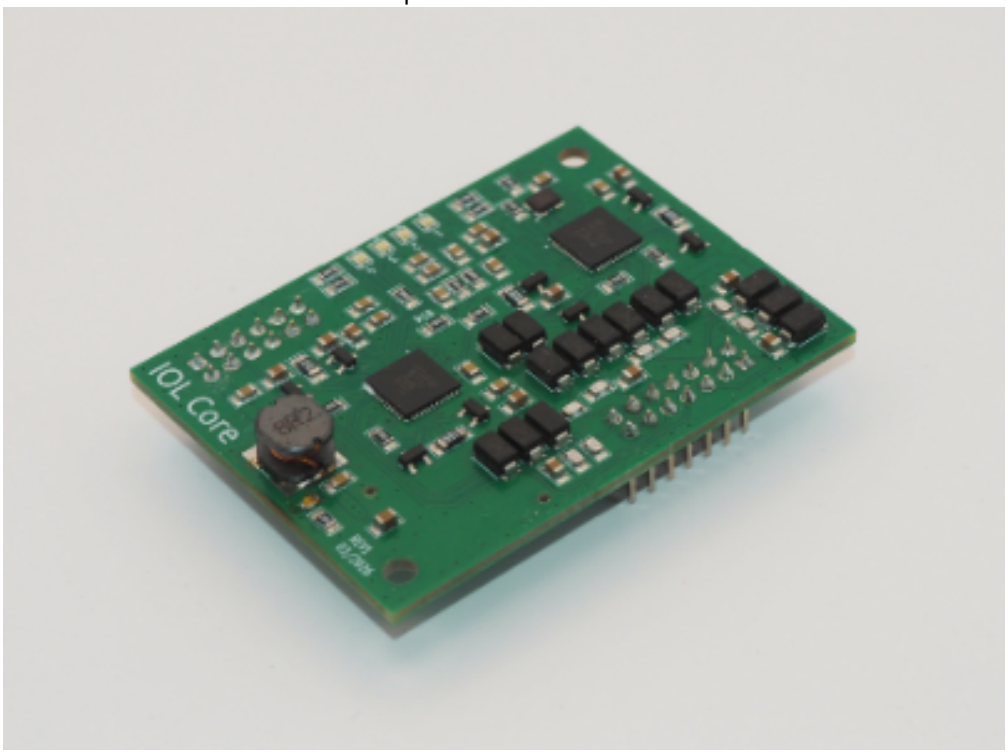

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6 Counters, Triggers & Timers

All functions from Counters, Triggers & Timers require min SW 1.4.x

This section describes the Counters & Triggers and Timers functions available in the Pinebox environment in Node-RED or as JSON endpoints. Both functions operate on IO-Link process data signals and share a common engine model and signal oscilloscope tool.

Functions

Counters & Triggers

Monitors IO-Link process data signals and uses configurable trigger conditions to increment or decrement software counters. Up to 8 triggers and 8 counters are available.

Timers

Measures elapsed time between two configurable IO-Link signal events. Up to 8 independent timers are available, each accumulating count, minimum, maximum, and average statistics.

Common Concepts

Engine model

Both functions use an engine that must be running for triggers, counters, or timers to operate. The engine can be started and stopped manually, or configured to start automatically each time the application launches (Autostart). Engine state is displayed on each function's page.

IO-Link process data

Triggers and timer conditions operate on process data variables from IO-Link ports 1–4. The available variables are populated automatically from the loaded IODD for the connected device.

Signal oscilloscope

A built-in signal oscilloscope is accessible directly from each trigger and timer configuration row. It displays a real-time waveform of the selected IO-Link process data signal and allows the trigger level to be set visually.