

# TI C2000 Toolbox ADC (Generic)

This document describes Generic ADC (Generic) component from TI C2000 Toolbox library.

## Short description

ADC (Generic) component enables the user to configure a single analog-to-digital conversion process, by referring directly to HIL device analog output. It is designed to simplify utilization of the MCU peripheral with the HIL device and [interface board](#).

Conversion result is available as component output.

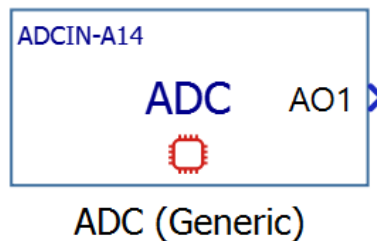


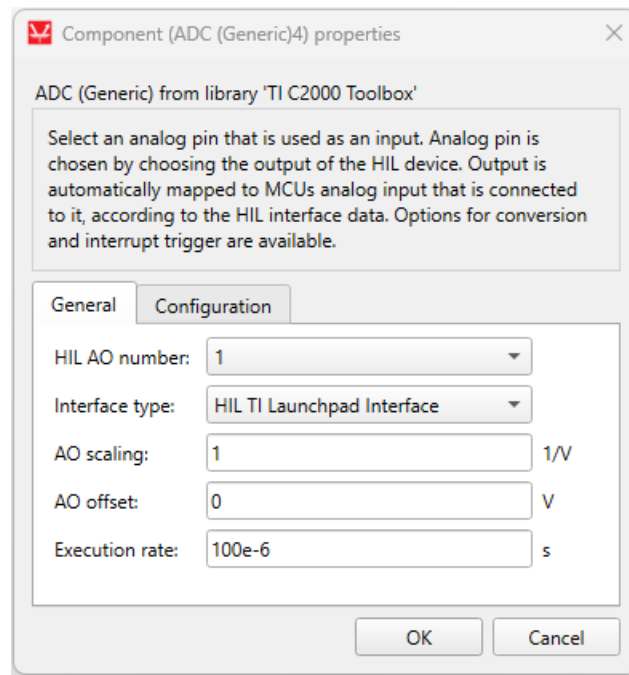
Figure 1. ADC (Generic) component icon.

## Detailed overview

### Component properties:

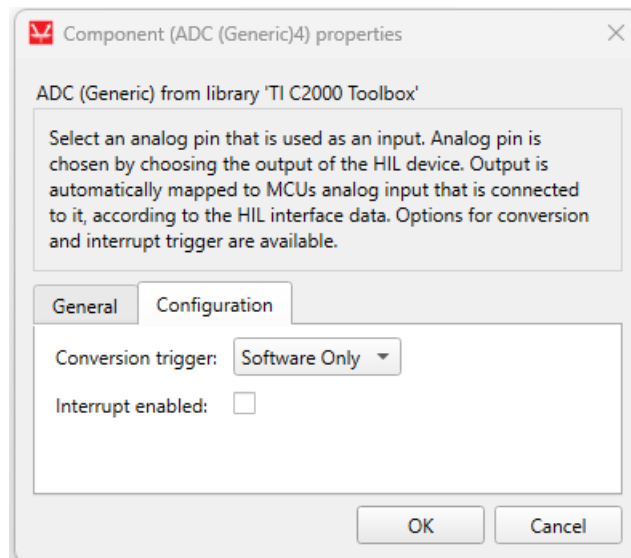
- Tab **General**:
  - HIL AO number – select number of the selected HIL analog output,
  - Interface type - select interface board that is used, currently supported boards are '*HIL TI Launchpad Interface*' and '*HIL TI uGrid Launchpad Interface*', '*HIL DSP 180 Interface*' and '*HIL DSP Interface*'.
  - Controller index - visible when '*HIL TI uGrid Launchpad Interface*' is selected, specifies which MCU slot on the interface board is used.
  - AO scaling – scaling coefficient to apply on sampled signal. AO scaling should have the same value as *scaling* parameter when configuring HIL AO in [Output Settings component](#) or SCADA.
  - AO offset – offset to apply on sampled signal. AO offset should have the same value as *offset* parameter when configuring HIL AO in [Output Settings component](#) or SCADA.
  - Execution rate – sampling rate of the selected HIL analog output. This value must be compatible with other components of the same subsystem: the value must be a multiple of the fastest execution rate in the circuit. To specify the execution rate, you can use either decimal (e.g. 0.001) or exponential values (e.g. 1e-3) in seconds.

For more details about parametrizing *AO scaling* and *AO offset* properties see [link](#).



**Figure 2. ADC (Generic) component dialog - General tab.**

- **Tab Configuration:**
  - Conversion trigger – start-of-conversion trigger source,
  - Interrupt enabled – determines whether ADC interrupt is enabled.



**Figure 3. ADC (Generic) component dialog - Configuration tab.**

**NOTE:** It is recommended to select *target platform* on [TI C2000 Setup](#) component, *interface type* and *controller index* before configuring the component.

Selected HIL AO number is mapped to corresponding MCU analog pin according to the selected [interface board](#). Currently supported interface boards are [HIL TI Launchpad Interface](#) and [HIL TI uGrid Launchpad Interface](#), [HIL DSP 180 Interface](#) and [HIL DSP Interface](#).

**Component outputs:**

- AO<sub>x</sub> – value of the sampled signal on selected HIL analog output x. This is the value of original signal, scaled back using the *AO scaling* and *AO offset* parameters.
  - Supported types: real
  - Vector support: no