# DAC - Analog outputs

SD004 | Posted on April 2, 2021 | Updated on July 24, 2025

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The DAC block applies a given value to one of the four analog outputs of the B-Box RCP. The corresponding hardware specifications are available in the B-Box datasheet.

## Simulink block

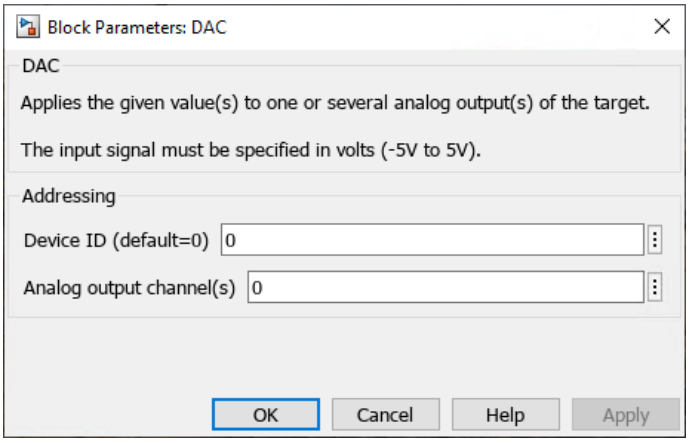
## Signal specification

The input signal is the value to apply to the analog output specified in volts (-5V to 5V). The output is saturated beyond these limits.


The B-Board PRO possesses no onboard DAC. However, the carrier board that is part of the Evaluation Kit embeds the necessary chip, so that four analog outputs are also available.

## Standard parameters

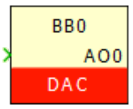
- `Device ID` selects which B-Box/B-Board to address when used in a multi-device configuration.
- `Analog output channel(s)` (vectorizable) selects a physical analog output channel (0 to 3)




## PLECS block

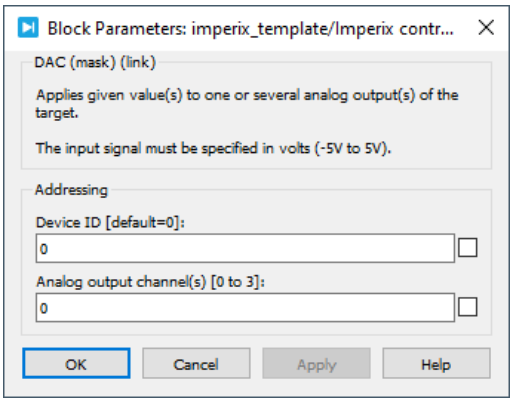
## Signal specification

The input signal is the value to apply to the analog output specified in volts (-5V to 5V). The output is saturated beyond these limits.




## Standard parameters

- `Device ID` selects which B-Box/B-Board to address when used in a multi-device configuration.
- `Analog output channel(s)` (vectorizable) selects a physical analog output channel(s) (0 to 3).




## C++ functions

`Dac_SetVoltage` **— Set analog output voltage**

```
void Dac_SetVoltage(unsigned int output, float voltage, unsigned int device=0);Code language: C++ (cpp)
```

Sets the value of an analog output in volts.

**Parameters**

- `output`: the analog output channel (0 to 3)
- `voltage`: the value to output in volts (-5V to 5V, saturated if over- / under-voltage)
- `device`: the id of the B-Box/B-Board to address (optional, used in multi-device configuration only)

`Dac_SetValue` **— Set analog output value**

```
void Dac_SetValue(unsigned int output, unsigned int value, unsigned int device=0);Code language: C++ (cpp)
```

Sets the value of an analog output using a raw 16-bit value.

`value=0` → output = -5V, `value=65535` → output = 5V

**Parameters**

- `output`: the analog output channel (0 to 3)
- `value`: the raw 16-bit value, saturated if overflow
- `device`: the id of the B-Box/B-Board to address (optional, used in multi-device configuration only)