


# Common Mode Summing Node


## Description

The sensing path of the interferometer common mode servo can be taken from the in-vacuum sensor, the in-air sensor or the ALS common arm length signal. Since the common mode servo board only supports two inputs, an additional summing node is required. The common mode summing junction features two inputs that are summed together the same way as in the input section of the common mode servo. Its output feeds one of the inputs of the common mode servo. Two of these boards can be mounted in a single chassis, making it possible to add up to four different inputs into a single common mode servo board.

## Specifications

DCC:  E1200178-v1

## Block Diagram

DCC:  D1300782-v1

## Summing Junction

Input 1:

- $\pm 10\text{V}$  differential
- TNC
- polarity switch
- enable switch
- gain slider  $-32\text{dB}$  to  $+31\text{dB}$
- excitation input
- switchable generic filter
- switchable option board

Input 2:

- $\pm 10\text{V}$  differential
- TNC
- polarity switch
- enable switch
- gain slider  $-32\text{dB}$  to  $+31\text{dB}$

Summing path:

- offset adjust for full  $\pm 10\text{V}$  input range
- switchable compensation filter
- switchable generic filter
- switchable option board

Sum output (after sum and filter):

- $\pm 10\text{V}$  differential
- TNC

Output (auxiliary):

- $\pm 10\text{V}$  differential
- TNC
- Selectable between inputs 1 and 2

DAQ outputs:

- $\pm 10\text{V}$  differential
- 9-pin D-sub, female, front
- whitening: 10Hz double zero/100Hz double pole
- input 1, input 2, sum and output 1

Transfer function:

- $>1$  MHz bandwidth

## **Chassis**

Physical:

- configuration: 2 summing junctions per chassis
- 19" rack mount
- 1U

Power:

- $\pm 16.5\text{V}$  and  $\pm 24\text{V}$

Slow controls:

- 37-pin D-sub, female, rear