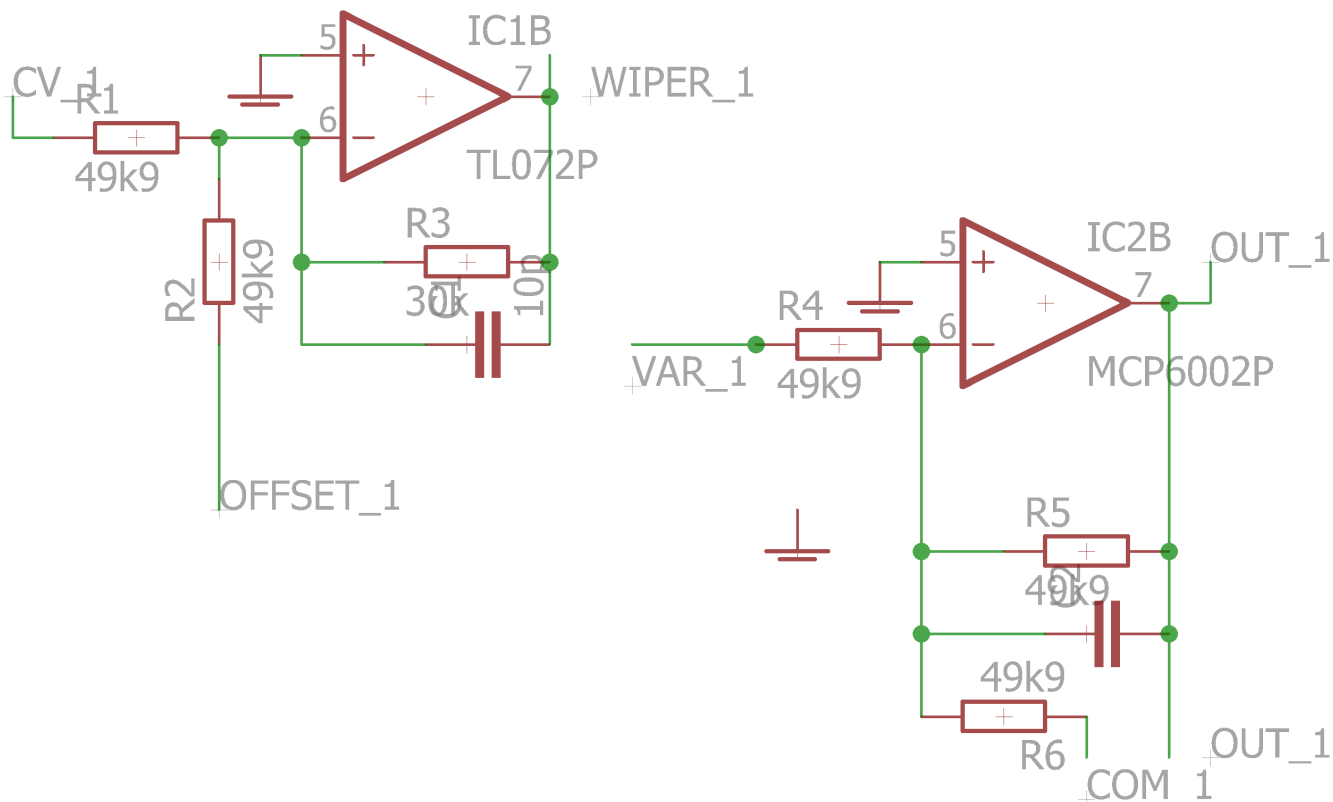


# AIN\_4 module

This is a simple way of scaling CVs (as might come from a modular) ready for an STM32F4 Core module.

## Schematic



The circuit is a very simple series of two inverting amplifiers per channel. The first is a TL072 powered from +12/-12V, while the second is an MCP6002 powered from 3v3/0V (ground). It's possible to preset the ranges (see below) but it's probably more useful to use the associated [Control Board](#).

## BOM

| Type              | Qty | Value | Package | Parts   | Notes |
|-------------------|-----|-------|---------|---|-------|
| <b>resistors</b>  |     |       |         |   |       |
|                   | 20  | 49k9  | 0204/7  | R1, R2, R4, R5, R6, R7, R8, R10, R11, R12, R13, R14, R16, R17, R18, R19, R20, R22, R23, R24 |       |
|                   | 4   | 30k   | 0204/7  | R3, R9, R15, R21  |       |
| <b>capacitors</b> |     |       |         |   |       |
|                   | 4   | 10p   | 025x050 | C1, C3, C5, C7  |       |

| Type             | Qty | Value    | Package            | Parts  | Notes   |
|------------------|-----|----------|--------------------|--|---|
| <b>resistors</b> |     |          |                    |  |   |
|                  | 9   | 100n     | 025×050            | C10, C12, C13, C14, C15, C16, C17, C18, C20  | remove 1 if powering from Core                        |
|                  | 3   | 10u      | electrolytic 2,5-6 | C9, C11, C19                                 | remove 1 if powering from Core                        |
|                  | 4   | optional | C025-025×050       | C2, C4, C6, C8                               | can use another e.g. 10pF cap here for more filtering |
| <b>inductors</b> |     |          |                    |  |   |
|                  | 2   | BEAD     | 5MM                | L1, L2                                       |   |
| <b>ICs</b>       |     |          |                    |  |   |
|                  | 2   | MCP6002P | DIL08              | IC2, IC4                                     |   |
|                  | 2   | TL072P   | DIL08              | IC1, IC3                                     |   |
| <b>Vreg</b>      |     |          |                    |  |   |
|                  | 1   | optional | 78XXS              | VR1  | remove if powering from Core                          |
| <b>headers</b>   |     |          |                    |  |   |
|                  | 7   |          | 1X02_SMALL         | JP1, JP2, JP3, JP4, JP5, JP6, JP7            | check board for headers as SIL strips of 3, 5 or 6    |
|                  | 8   |          | 1X03_SMALL         | JP8, JP9, JP10, JP11, JP12, JP13, JP14, JP15 |   |
|                  | 2   |          | 2*5 (shrouded)     | J1, J2                                       |   |

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