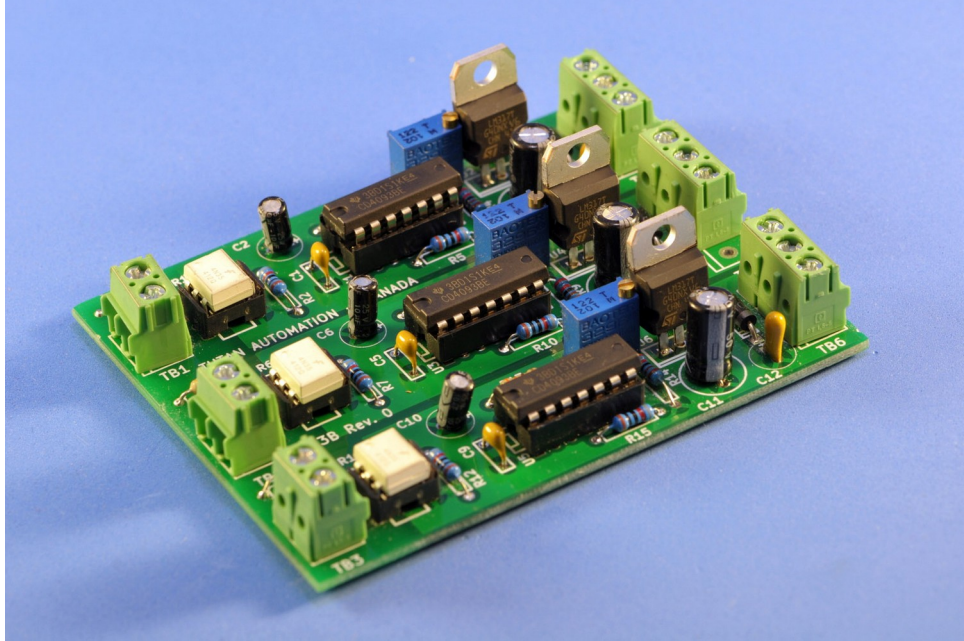


Isolated 3 channel PWM to Analogue Converter



This board houses three independent PWM to 0-10V analogue converters with optical input-output isolation. It is suitable to interface controllers with PWM (TTL level) outputs to standard Variable Frequency Drives (VFD) or similar devices that require analogue input set-points to control an operational parameter (i.e speed, torque, etc.)

SPECIFICATIONS

- Number of channels: 2 or 3
- PWM input: TTL level. Max frequency 1 KHz
- Output: Adjustable 0 to 5..12V
- Linearity: 2% FSD
- Isolation: Min. 500 Vac
- Power: Nominal 24 Vdc (Acceptable range 17 to 30Vdc)¹
- Dimensions: 3.40 x 2.70 x 0.65 in (87 x 69 x 16 mm)

¹ The maximum voltage when the power regulator is bypassed (jumpers JP1, JP2 or JP3 closed) is 15Vdc. If the output voltage is adjusted to 5V then the power supply can be as low as 10Vdc.

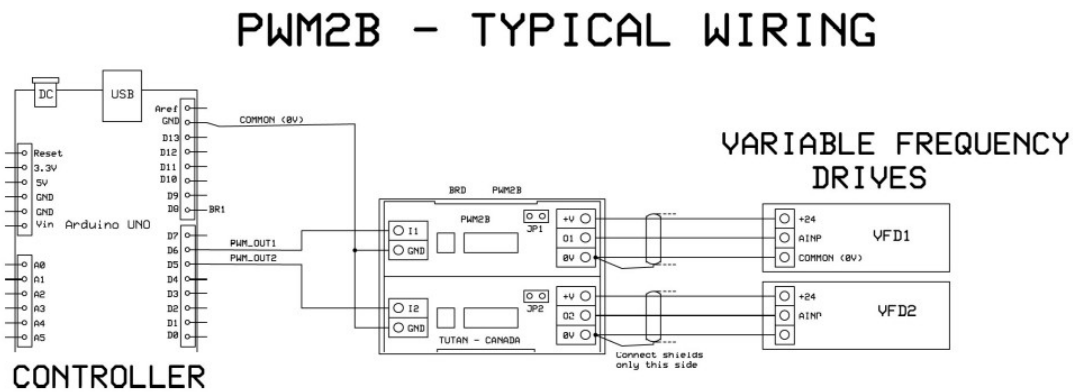
INSTRUCTIONS

The following instructions apply to each channel

POWER SUPPLY

- Leave jumper JP(n) open for 24Vdc operation. The maximum output level can be adjusted with the trim-pot RV(n) in the range 5 – 15 V (approx).
- Close jumper JP(n) to use the VFD wetting voltage (typically 10Vdc). The maximum output is the supply voltage. Do not exceed 15V to prevent damage to the CMOS circuit.

EXAMPLE WIRING



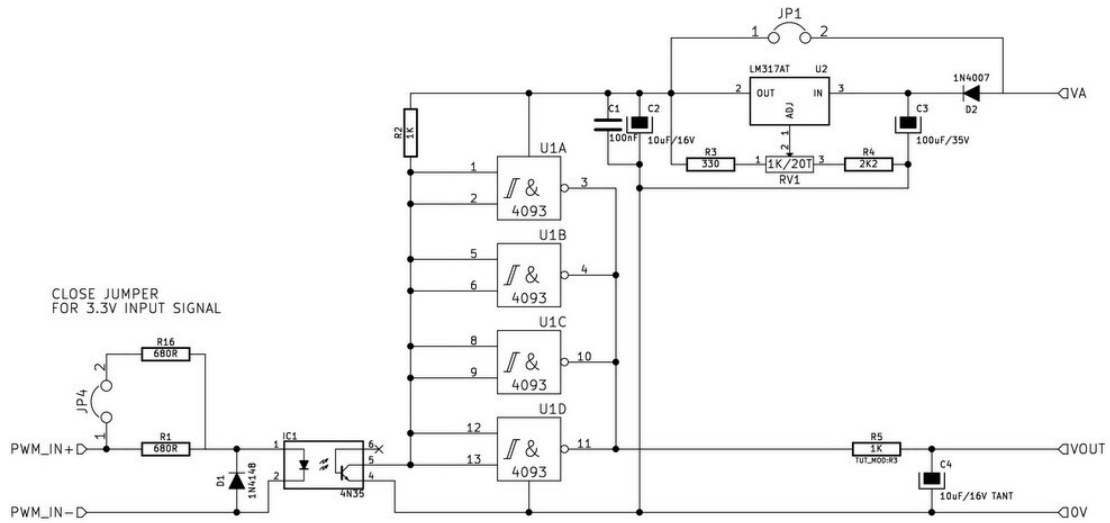
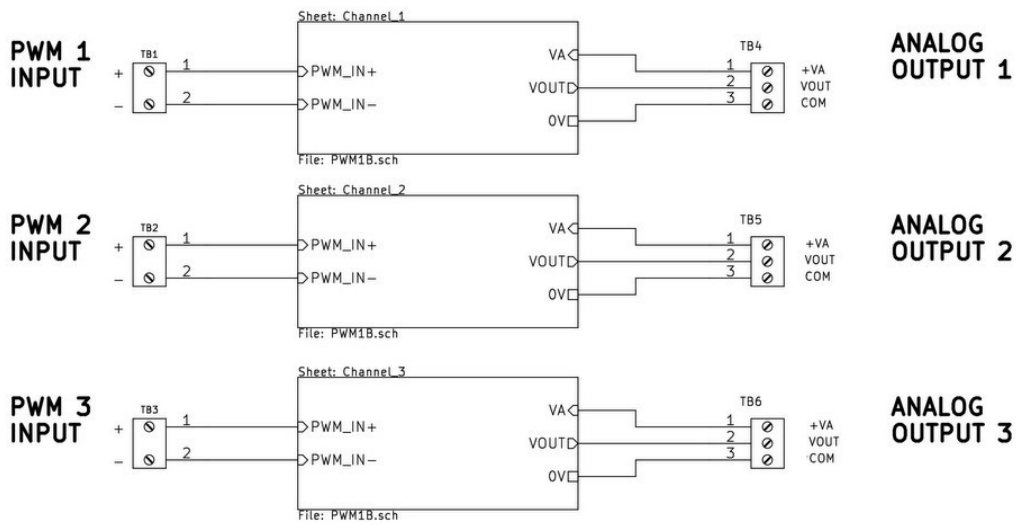
OUTPUT LEVEL ADJUST

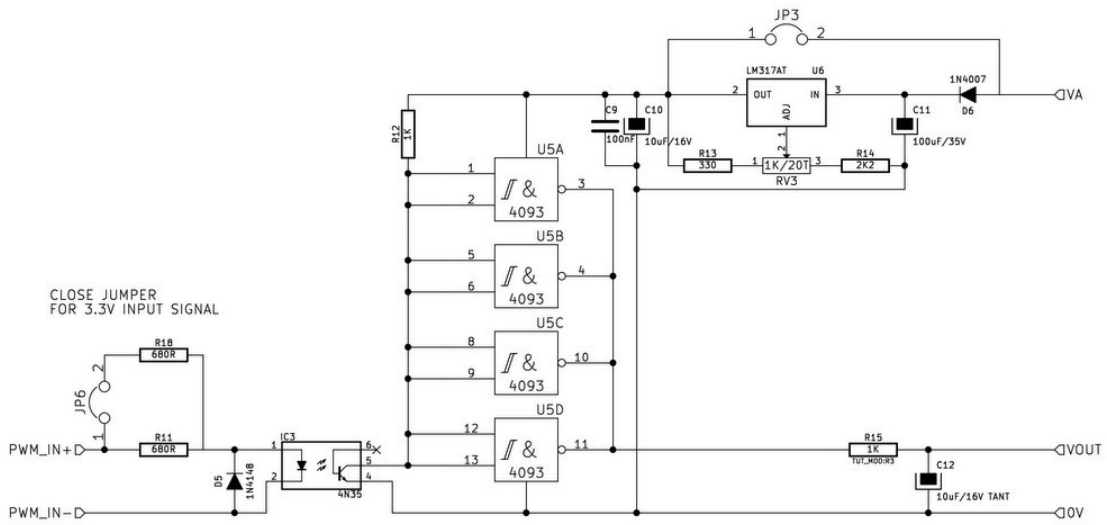
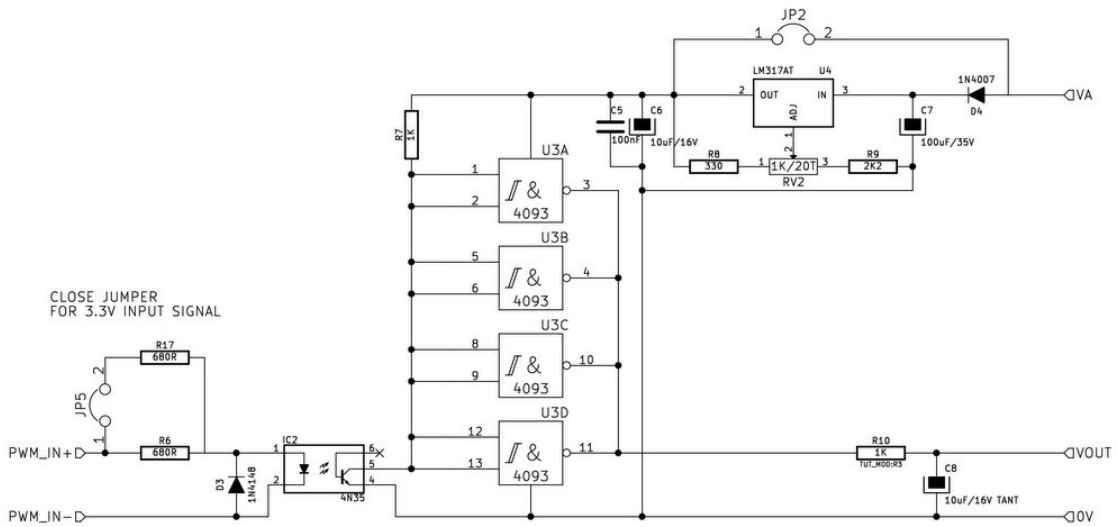
Apply 5V to input (PWM=100%) and adjust trim-pot RV(n) to desired value.
Verify that the output is 0-10mV with the input open (PWM=0%).

NOTE: It is recommended to adjust the output voltage with the board connected to the device in order to compensate for the voltage drop caused by the input resistance.

Open voltage calculation:

$$V_{open} = V_{in} (1 + 1K / R_{in})$$

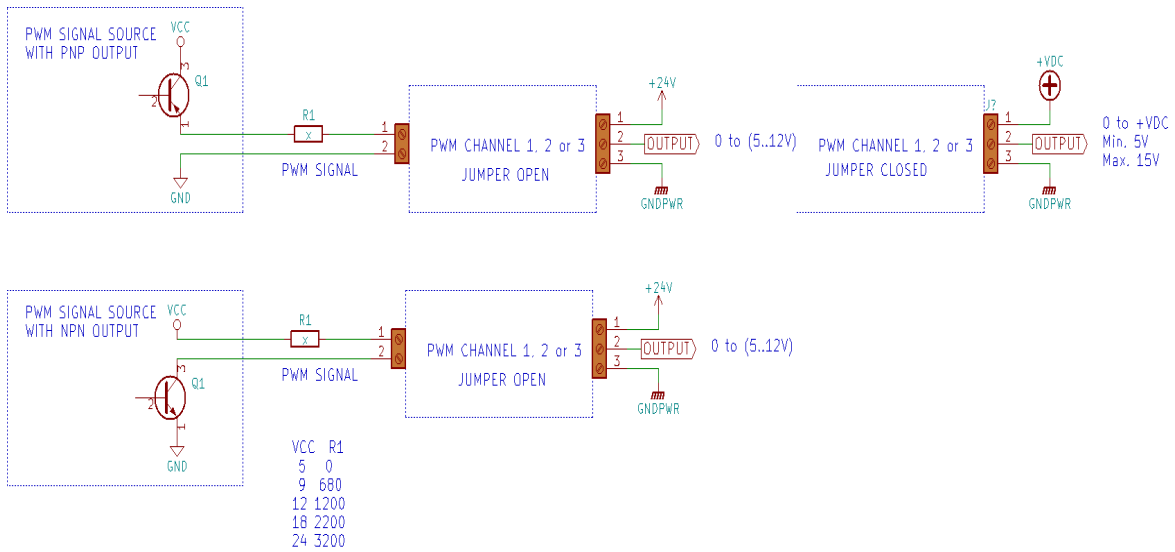




PWM3B - BOM

Pos	Qty	References	Value
1	3	C1 C5 C9	100nF
2	3	C2 C6 C10	10uF/16V
3	3	C4 C8 C12	10uF/16V TANT
4	3	C3 C7 C11	100uF/35V
5	3	D1 D3 D5	1N4148
6	3	D2 D4 D6	1N4007
7	3	IC1 IC2 IC3	4N35
8	3	JP1 JP2 JP3	SIL1_100
9	3	R3 R8 R13	330R
10	3	R1 R6 R11	680R
11	3	R2 R5 R7 R10 R12 R15	1K
12	3	RV1 RV2 RV3	1K/20T
13	3	R4 R9 R14	2K2
14	3	TB1 TB2 TB3	CONN_2_V
15	3	TB4 TB5 TB6	CONN_3_V
16	3	U1 U3 U5	CD4093
17	3	U2 U4 U6	LM317AT
18	3	SK1 SK2 SK3	DIL6_300
19	3	SK4 SK4 SK6	DIL14_300
20	1	PCB1	PWM3B

WIRING EXAMPLES – 5, 9, 12, 16 and 24V LOGIC



TUTAN AUTOMATION – CANADA

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Title: PWM CONNECTIONS

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