PWM DC Motor Speed Control Module ARN4224

Basic description:

This PWM Regulator can control brightness of DC light bulbs, DC motor speed, temperature of soldering irons, and other DC loads. It provides smooth regulation of power from 0 to 100 %. Power output level is set with a 10 kΩ potentiometer. Regulation is by using no-loss pulses at 600 Hz (frequency can be changed by external resistor or potentiometer up to 6.6 kHz), supply DC voltage can be from 8 to 42 V. Load current is up to 24 A permanently. Will control loads of up to 1 HP.

Basic technical specification:

Supply voltage:	DC 8 to 42 Volts.
Load current:	24 Amps permanently.
Range of regulation:	0 to 100 % of power.
Frequency of regulation:	settable by external resistor from 600 Hz up to 6,6 kHz.

Connection of regulator:

Comes with a 7 pole terminal strip for connecting potentiometer, supply voltage and load
Plug **POT. RIGHT** – right pin of potentiometer
Plug **POT. MIDDLE** – middle pin of potentiometer
Plug **POT. LEFT** – left pin of potentiometer
Plug **SUPPLY MINUS** – minus of DC supply voltage
Plug **LOAD MINUS** – minus of load
Plug **LOAD PLUS** – plus of load
Plug **SUPPLY PLUS** – plus of DC supply voltage
Two pins on board – for external resistor to change frequency

Notes:

If regulator is powered from a source with transformer and rectifying bridge or if input lines are longer than one foot, input capacitor has to be used. **Attention!** There is no protection against incorrect polarity of supply voltage or short circuit on load. That is why using 16 Amps fuse is recommended between source and regulator. At maximum load current, the heatsink shouldn't be covered. There are two positions on board for adding resistors to adapt the regulator for a different potentiometer.

Resistors for different potentiometer fitting are calculated according to formula: $\mathbf{R_N=4.7R_P/(10-R_P)}$, where $\mathbf{R_N}$ is resistance of added resistors to free positions in kΩ and $\mathbf{R_P}$ is resistance of new potentiometer in kΩ. For fitting to potentiometers with resistivity more than 10 kΩ add parallel resistor to potentiometer calculated according to formula: $\mathbf{R=10R_P/(R_P-10)}$.

Resistor for frequency changing is calculated according to formula: $\mathbf{R_F=(450-68f_N)/(f_N-0.6)}$, where $\mathbf{f_N}$ is new frequency in kHz and $\mathbf{R_F}$ is resistance of external resistor in kΩ.

Warranty:

Warranty is 24 months from date of sale.

Produced by:

BEL **s.r.o., Eliasova 38, 160 00, Prague 6, Czech Republic**
e-mail: info@bel-shop.eu, WWW: www.bel-shop.eu

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date of sale stamp, signature