

Speed Controller for Brushed DC Motors

Model FE Z1

This small motor speed controller can be used to adjust the flow rate of all our transfer pumps with 12 and 24 volt brushed motors via a potentiometer. The controller works with Pulse Width Modulation (PWM), at a low frequency making it also suitable for use with brushed motors equipped with an electro magnetic compatibility (EMC) circuit. Common PWM signals work at higher frequencies which can interfere with the EMC circuit on the motor.

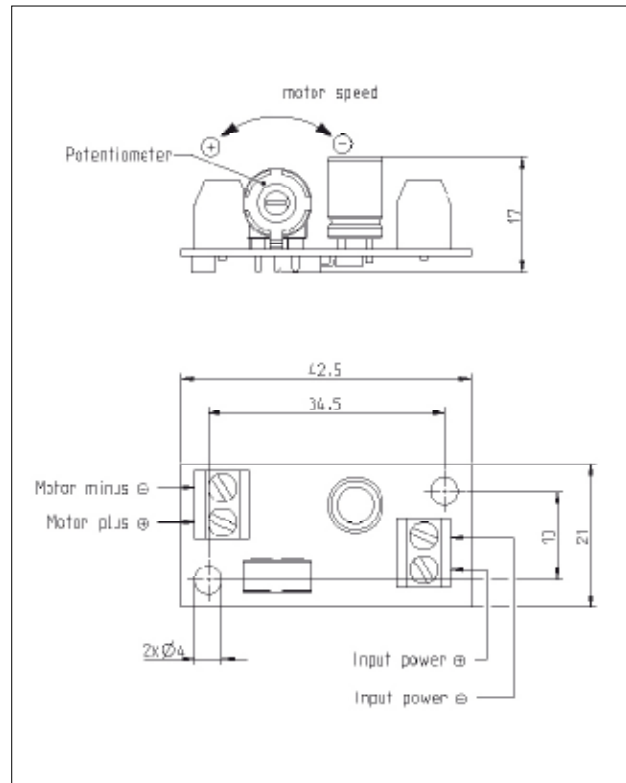
In general the flow rate of the transfer pumps can vary from pump to pump due to tolerances in the build components, by using such a speed controller the pumps can be adjusted to deliver the exact flow required. The repeatability of a fast oscillating pump is of course very good, so once adjusted the flow rate stays the same over a long period of time.

There are several advantages of using a PWM generator:

- the range of control is often greater
(NF 5, NF 10, NF 30, NF60 with brushed DC motors)
- the repeatability is better
- the system is more energy efficient
- it can be used instead of an expensive variable power supply unit
- one controller can control several pumps in parallel
(up to max. current draw)

Important notes:

1. The flow rate of the pumps is not always directly proportional to the motor speed.
2. If a standard brushed motor runs at slow speeds for a long period of time then there is the danger of reduced lifetime (carbon dust will build up and eventually block the brushes).
3. At very low speeds there is the danger that the pump will not self-prime.



Technical information

Type	FE_Z1
Ident numer	155 601
Power supply	10 - 28 V
Max. acceptable current draw	2A
Max. current peak	6A
PWM frequency	16 Hz

IMPORTANT NOTE:

- The power supply must not exceed the max. allowed motor voltage.
- Reversed polarity will cause damage to the controller.