

■ When selecting a control to operate the speed of fan or pump motors, it is essential to consider a number of important factors. The data herein is only a brief overview. It is not intended to provide the full technical details on the selection of fans or motors. To avoid doubt the fan or motor manufacturer should be consulted for guidance.



FAN SPEED CONTROLS

|        |               |              |                       |
|--------|---------------|--------------|-----------------------|
| MTY..  | Potentiometer | 1 Phase Fans | Manual Control        |
| STL..  | Potentiometer | 1 Phase Fans | Manual Control        |
| ERV..  | 0-10VDC Input | 1 Phase Fans | Automatic Control     |
| STR..  | Transformer   | 1 Phase Fans | 5 Step Manual Control |
| STR4.. | Transformer   | 3 Phase Fans | 5 Step Manual Control |

Fan Speed Controls are also available for use with:

- Motors with TK thermal cut-out.
- Differential Pressure Transmitters.
- Temperature Operated.

FAN SUITABILITY

Propeller, Centrifugal and Axial.

FAN MOTOR SELECTION

Motors must be capable of running at reduced speeds and voltages.  
 Suitable types are split capacitor, shaded pole and 6 or 8 pole motors.  
 4 pole motors are most suitable as they operate over a wider control range.  
 2 pole motors are difficult to control <600 rpm and have poor starting performance at reduced voltages.  
 (This may not be problem when the 5 step fan speed controller is used)  
 High resistance rotors are ideal and give more stable linear characteristics.  
 These fan speed controls are generally not suitable for pump motor control.

TEMPERATURE

Use Class  $\text{F}$  rated rotor windings which can withstand temperatures up to 155°C.  
 Running at low speeds can increase the motor temperature. Motors should be air cooled.  
 A larger frame size may be necessary to dissipate the extra heat generated when running at low speeds.  
 Motor thermal protection is recommended.  
 The fan speed controls are rated at 30°C ambient. The nominal current should be de-rated by 2% per 1°C increase up to a max of 40°C.

LOAD PERFORMANCE

The motor size should be matched to the impeller load.  
 Optimum speed control is achieved when the motor load absorbs at least 75% of the rated nominal motor power when running at full speed.  
 The fan speed control nominal current should be greater than the nominal motor running current.  
 Several motors can be wired to one fan speed control but the current limits must not be exceeded.  
 Note that the running current on most motors can increase by approx 20% when the speed is reduced