CLARK

TSFR 400 Series Magnetic Drive Rotary Vane Pump

Integral Motor & Driver/Speed Controller, Flow to 1000 lph

DESCRIPTION

Designed for those applications where many hours of operation are required, the TSFR delivers up to 1000 l/h on a continuous duty base. The TSFR, an integrated pump-motor unit where the motor has no moving parts, features a combination of compact size, superior performance, low energy consumption and silent operation to provide great versatility in a refined, high tech design.

The internal magnet, driven through an electromagnetic field, is capable of transmitting high torque to the shaft. The speed control system allows the unit to self-adapt to the hydraulic conditions of the circuit to maintain a set pressure or flow rate, while the brushless technology provides a reliable and long lasting operation.

Model TSFR & Power Supply/Speed Controller

SPECIFICATIONS

Pump Housing Material: AISI 303 stainless steel
Model Selection/Flow Characteristics: See Table 1
Pumping Chamber: Carbon graphite
Ports: 3/8" NPT
Internal Bypass/Pressure Relief Valve: Standard or balanced on select models
Max Static Pressure: 20 bar/290 psi
Noise: 49dB (A) at 1500 rpm
Unit Weight (w/o controller): 2.8 kg (6.2 Lb)
Max. Operative Temperature: 70 °C (158 F)
Motor type: 115 V AC, 230 V AC 50/60 Hz
Speed Range: 1100 to 3500 rpm
Duty: Continuous
Absorbed Power: Max 330 W
Actual Power: Max 250 W
Motor IP protection: IP 20

-Compact Size ***-Motor Housing in Aluminum***
-No Wear on Motor ***-Continuous Duty***
-Speed Control

Typical Applications	
-Laser Cooling	-Fuel Burner
-Solar Heating	-Water Pressurization
-Reverse Osmosis	-Post Mix Systems
-Circuit Washing	-Welding

CONTROLLER OPERATING MODES

1) ON-OFF by Main Power Supply & DIP Switch Settings:
In this mode a choice of eight speed selections are available and field programmed via a six position DIP switch. Speed choices are 1100 rpm, 1500 rpm, 1750 rpm, 2000 rpm, 2500 rpm, 2750 rpm, 3000 rpm &3500 rpm.

2) OPTO DIGITAL ON/OFF :
In this mode speed selections are made as above and motor is turned on & off by remote command.

3) OPTO DIGITAL (External DIP):
In this mode a choice of four speed selections and on-off control are by remote command. Speed selections are 1100 rpm, 1500 rpm, 2000 rpm & 2500 RPM

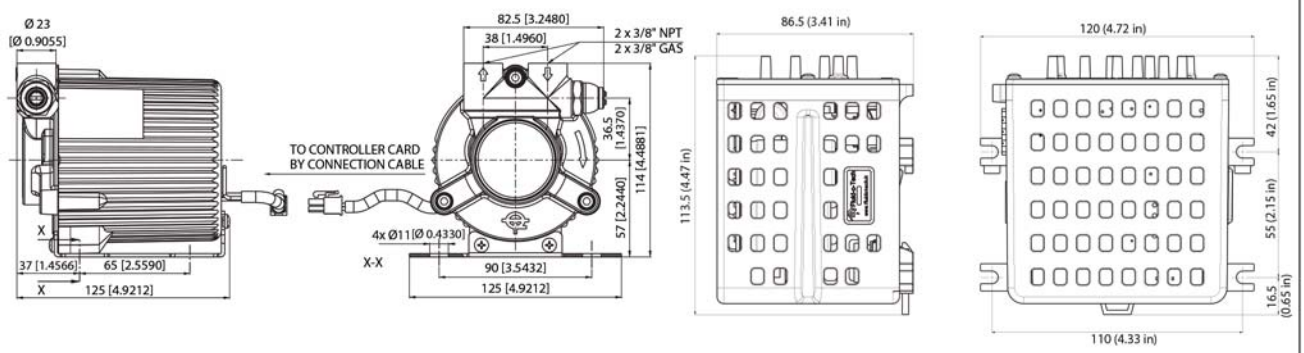
4) ANALOG COMMAND with ON-OFF OPTO DIGITAL :
In this mode speed is controlled between 500 rpm to 3500 rpm with a choice of standard analog inputs (0-5 V or 4-20 mA). Selection of a PWM command of 100-10,000 Hz is also available.

Fault Ouptuts:

The TMFR/TSFR driver has a fault signal in OR function which includes the alarms (Autoresettable and Permanent):

1 - Over-voltage
2 - Under-voltage
3 - Over-temperature
4 - Start-up
5 - Rotor blocked
6 – Module Fault (hardware)
7 - Over-current power
8 - Over-current hardware limit (50% more than the over-current power)

DIMENSIONS



Dimensions in mm [inches]

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ABOUT RELIEF VALVES

Relief valves are offered on select models of rotary vane pumps throughout the product line. Two types of relief valves are offered:

1) Standard Relief valve: A spring loaded bypass check valve diverts flow from the pump outlet to the pump inlet when outlet pressure exceeds setpoint (set with spring tensioning set screw).
2) Balanced relief valve: A pressure compensation plunger with dynamic seal and referenced (ported on one side) to atmosphere is added to the downstream side of the standard check-valve assembly. This insures that cracking pressure of the relief valve remains unchanged regardless of changes in inlet pressure (that might be a condition in a pressurized system).

The cracking pressure can be field set by adjusting the spring tension with the adjusting screw. When not customer specified the TSFR relief valve cracking pressure is factory set.

It is not recommended to use the relief/bypass valve for flow control. This will result in premature wear of the valve assembly and require frequent maintenance.

MODEL SELECTION/FLOW CURVES

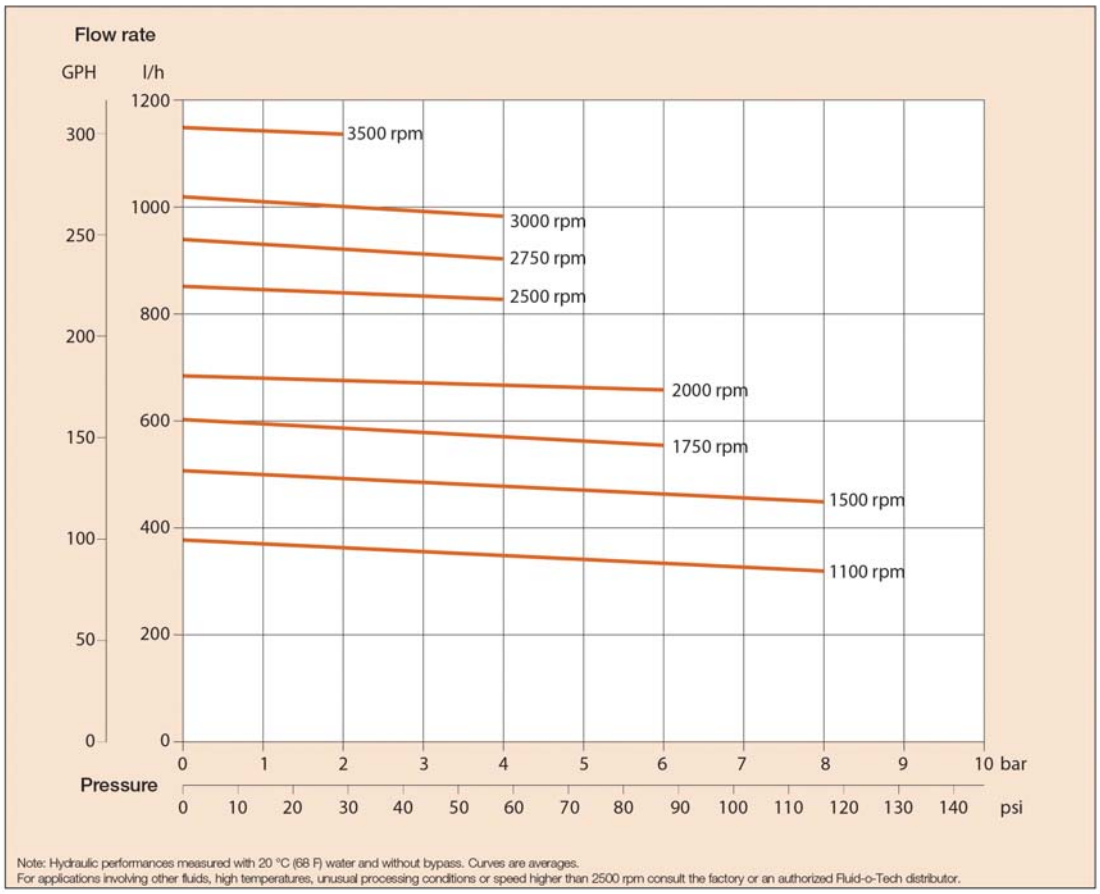

Table 1

Stainless Model TSFRSS	400	401
Relief Valve	NO	STD

ORDERING INFORMATION

MODEL: AB-C-D
EXAMPLE- TSFR400115

A Model	B Pump Code	C Power Supply	D Relief Valve Crack Pressure
TSFRSS= Stainless Steel	See Tables 1	115= 110 VAC, single phase 230= 230 VAC, single phase	-None Specified XXX- Specify in PSI