



M400 Micropump Range

TCS MICROPUMPS: M400S and M400K (Including W, 180 and SUB Variants)

(Patents Pending, Quality Assured ISO 9001, RoHS compliant, IP45 and IP67 protection rating)

INTRODUCTION

The TCS M400 Micropumps are a high-quality miniature pump for liquids. They are highly efficient, small and lightweight. The solid construction and wide temperature tolerance, enable them to perform reliably even in hostile environments. Your Micropump can be quickly and easily installed into the smallest spaces, in a vast range of laboratory, prototype and production equipment.

ELECTRICAL CONNECTION

CAUTION: REVERSED OR INCORRECT CONNECTION WILL PERMANENTLY DAMAGE THE ELECTRONICS IN YOUR PUMP!

Voltage: 3.0 to 12.0 Volts dc (Maximum 0.5Amps)

The simplest connection is Red, Green and Grey together to +ve (Positive) supply, Black to -ve (Negative) of supply

Wire Colour	Description	Connection	Status
Black	GRD The negative connection	-Ve	Required
Grey	VM Motor Power Supply	+Ve 3.0-12.0	Required
Red	Vcc Onboard Controller Supply Circuit	+Ve 3.0-12.0	Required
Green	CW/CCW Motor Rotation	+Ve 3.0-12.0	Required
Yellow	RPM Signal Wire	GND Vcc 4 pulse / revolution square wave signal	Optional

Your Micropump can be connected to batteries, a DC power source of up to 12V or a TCS power supply TCS-600 (see accessories page on website).

Pumping rate can be adjusted by varying input voltages between 3.0v and 12.0v dc. Further fine tuning can be made by restricting the outlet of your pump using a fixed jet restriction or flexible tubing and an adjustable clamp. The M400 pump is quite happy to run even with the outlet completely blocked. Pressure inside the pump will increase; yet load on the drive motor will reduce as flow is reduced.

Micropump life is increased at lower operating voltage/speed. Do not run your Micropump when dry.

Materials

Housing	Anodised Aluminium
Tubing Connectors	Stainless Steel 316
Impeller	Polyacetal
Seals	Viton

TUBING

M400K:	3.2mm (1/8") bore flexible tubing
M400S:	5.0mm (3/16") bore flexible tubing

Notes on Operation

The M400 series Micropumps require the pump and suction side of the fluid circuit to be filled with liquid (primed) before they can operate. The pump will not operate correctly if any air remains within the fluid circuit.



M400



M400 SUB



M400 180

NOTE Micropumps are required to be filled with liquid (primed) before they can operate.

DO NOT run your Micropump dry. Ensure that the pump has been primed before use.

TCS Micropump Performance Data	Input Voltage (V)	Current Draw (A)	Power Usage (W)	Pressure (mBar)	Pressure (psi)	Free Flow Rate (ml/min)	Operating Temperature range (C)
M400S	6.0 12.0	0.22 0.60	1.3 7.1	86 380	1.2 5.5	1495 2685	-20 to 120 -20 to 120
M400K	6.0 12.0	0.20 0.48	1.2 5.8	86 380	1.2 5.5	500 1150	-20 to 120 -20 to 120