



M410 S and K variants

Long Life Micropumps

TCS MICROPUMPS: M410

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

INTRODUCTION

The TCS M410 Micropumps are a high-quality 'Long Life' 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 +ve (Positive) supply, Black to -ve (Negative) supply with the pump output controlled via the supply voltage.

Wire Colour	Description	Connection	Status
RED	Supply	+Ve	Required
GREEN	Speed control Signal	Speed Signal Output	Optional
YELLOW	CW/CCW control	-Ve Motor rotates counter clockwise viewed from output shaft end when connected and clockwise if unconnected.	NOT USED
BLACK	Supply	-Ve	Required
BLUE	PWM Speed Control	Connect to PWM signal to adjust motor speed. Motor runs full speed if unconnected	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 M410 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.

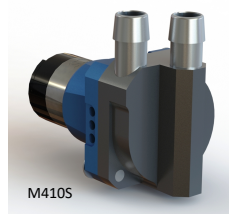
Micropump life is increased at lower operating voltage/speed. Do not run your Micropump when dry.



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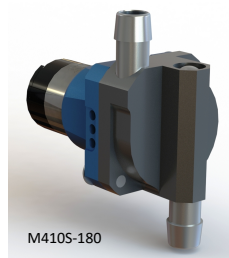
MATERIALS

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



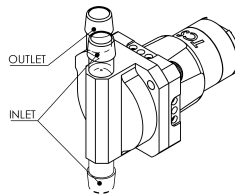
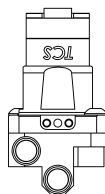
TUBING

M410S- all variants:	5.0mm (3/16") bore flexible tubing
M410K-all variants	3.2mm (1/8") bore flexible tubing

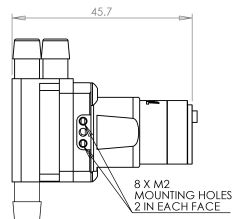
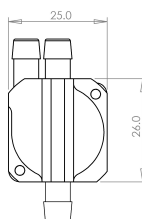


NOTES ON OPERATION

The M410 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.



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)
M410S	6.0 12.0	0.19 0.50	1.2 6.0	86 380	1.2 5.5	1495 2685	0 to 90 0 to 90