



Datasheet

Micropumps

Pump Type	RS Part No	Flow/Feed Configuration	Data Input Voltage (V)	Input Voltage range (V)
Diaphragm Pumps				
D200-03	702 6894	Parallel, 4 Way	2.5	1.5 - 5.0
D250-03	702 6898	Parallel, 4 Way	2.5	1.5 - 5.0
Centrifugal Pumps				
M400-S	702 6872	Vertical	12.0	3.0 - 12.0
M400-SUB	702 6885	Submersible	12.0	3.0 - 12.0
M400-S180	702 6882	In-line	12.0	3.0 - 12.0
M400-K	702 6876	Vertical	12.0	3.0 - 12.0
M400-KSUB	702 6888	Submersible	12.0	3.0 - 12.0
M400-K180	702 6891	In-line	12.0	3.0 - 12.0

		Current (A)	Power Usage (W)	Tubing Bore Size (mm)
Diaphragm Pumps				
D200-03	702 6894	0.19	0.48	2.4
D250-03	702 6898	0.19	0.48	2.4
Centrifugal Pumps				
M400-S	702 6872	0.5	6.00	5.0
M400-SUB	702 6885	0.5	6.00	5.0
M400-S180	702 6882	0.5	6.00	5.0
M400-K	702 6876	0.5	6.00	3.2
M400-KSUB	702 6888	0.5	6.00	3.2
M400-K180	702 6891	0.5	6.00	3.2



		Water Free Flow Rate (ml/min)	Water Delta Pressure	Air Free Flow Rate (ml/min)	Air Max Delta Pressure (psi)
Diaphragm Pumps					
D200-03	702 6894	40	16	150	4
D250-03	702 6898	40	18	150	5

Centrifugal Pumps					
M400-S	702 6872	2800	5	na	na
M400-SUB	702 6885	2800	5	na	na
M400-S180	702 6882	2800	5	na	na
M400-K	702 6876	2000	5	na	na
M400-KSUB	702 6888	2000	5	na	na
M400-K180	702 6891	2000	5	na	na

		Weight (g)	Size (mm)	Maximum Viscosity (cSt)	Noise (dba)
Diaphragm Pumps					
D200-03	702 6894	32	40x25x17	20	15
D250-03	702 6898	38	40x25x17	20	15
Centrifugal Pumps					
M400-S	702 6872	33	41x26x25	30	15
M400-SUB	702 6885	36	41x26x25	30	15
M400-S180	702 6882	33	41x26x25	30	15
M400-K	702 6876	33	41x26x25	20	15
M400-KSUB	702 6888	36	41x26x25	20	15
M400-K180	702 6891	33	41x26x25	20	15



		IP Rating	Temperature Range [C]	Max Pressure (Bar)
Diaphragm Pumps				
D200-03	702 6894	50	0 to 100	1.0
D250-03	702 6898	50	0 to 100	1.5
Centrifugal Pumps				
M400-S	702 6872	52	-20 to 120	0.323
M400-SUB	702 6885	67	-20 to 100	0.323
M400-S180	702 6882	52	-20 to 120	0.323
M400-K	702 6876	52	-20 to 120	0.323
M400-KSUB	702 6888	68	-20 to 120	0.323
M400-K180	702 6891	52	-20 to 120	0.323

Wetted Materials

Diaphragm Pumps	RS Part No	Body	Connectors	Impeller	Seals
D200-03	702 6894	Nylon	Nylon	na	Silicone & Nitrile
D250-03	702 6898	Anodised Aluminium	Stainless Steel 316	na	Silicone & Nitrile
Centrifugal Pumps					
M400-S	702 6872	Anodised Aluminium	Stainless Steel 316	Acetal	Viton
M400-SUB	702 6885	Anodised Aluminium	Stainless Steel 316	Acetal	Viton
M400-S180	702 6882	Anodised Aluminium	Stainless Steel 316	Acetal	Viton

**Wetted Materials**

Diaphragm Pumps	RS Part No	Body	Connectors	Impeller	Seals
M400-K	702 6876	Anodised Aluminium	Stainless Steel 316	Acetal	Viton
M400-KSUB	702 6888	Anodised Aluminium	Stainless Steel 316	Acetal	Viton
M400-K180	702 6891	Anodised Aluminium	Stainless Steel 316	Acetal	Viton

Compatibility - Liquids/Solutions**Excellent**

RS Coolant (RS Part no 480 172), Alcohol Ethyl, Beer, Coffee, Diesel Fuel, Linseed Oil, Olive Oil, Palm Oil, Petrol-Unleaded, Grape Juice, Kerosene, Milk, Sodium Nitrate, Silicone light oil, Starch, Turpentine.

Good

Antifreeze, Benzene, Bleach, Calcium Carbonate, Chromic Acid 10%, Cider, Citric Oil, Citric Acid, Detergents, Epsom Salts (Magnesium Sulphate), Ethanol, Ether, Formic Acid, Fuel Oils, Freon 12, Hydrogen Peroxide <2%, Ink, Magnesium Nitrate, Methanol, Nitric Acid<5%, Parafin, Phosphoric Acid<30%, Polypropylene Glycol, Sea Water, Soap Solution, Sodium Carbonate, Urine, Vinegar, Weed Killer, Whiskey, Wines. Xylene, Zinc Chloride.

Poor

Acetone, Ammonia, Hydrochloric Acid >10%, Ketones, Phosphorous Trichloride, Sodium Hydroxide >20%, Sulphuric Acid >10%, Toluene.

Flow Adjustability

Input Voltage may be varied to within voltage range stated to adjust flow. Flow of M400 range may be restricted/controlled. M400 range can be run even if the flow is 100% restricted.

MAINS POWER SUPPLY REQUIREMENTS

Diaphragm Pumps: Adjustable working voltage range : 1.5v to 6.0v, Current available to 250mA

Centrifugal Pumps: Adjustable working voltage range : 3.0v to 12.0v, Current available to 1000mA



RS MICROPUMPS: 702-6872; 702-6876; 702-6882; 702-6885; 702-6888; 702-6891
(Patents Pending, Quality Assured ISO 9001, RoHS compliant)

INTRODUCTION

The RS Micropump is a high-quality miniature pump for liquids. It is highly efficient, small and lightweight. The solid construction and wide temperature tolerance, enable it 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 (Max 0.5 Amps)

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

Wire Colour	Item	Standard	Connection
Black	GND	The negative connection	Required
Grey	VM (Motor Power)	3.0~12.0VDC (Motor Speed Control) for motor	Required
Red	Vcc - Electric Circuit Supply	12VDC (3.0~12.0VDC)	Required
Green	CW/CCW (Motor Rotation)	CW: to Vcc; CCW: to GND (Connect to Positive Vcc)	Required
Yellow	RPM	GND / Vcc 4 pulse / revolution square wave signal	Optional

Your Micropump can be connected to batteries or a suitable power supply

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 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.

TUBING

702-6872; 702-6882; 702-6885: Flexible tubing 5.0mm bore
702-6876; 702-6888; 702-6891: Flexible tubing 3.2mm bore

These micropumps are required to be filled with liquid (primed) before they can operate.

(DO NOT IMMERSE YOUR MICROPUMP UNLESS YOU HAVE A SUBMERSIBLE OR WATERPROOF VERSION)

MATERIALS

Housing: Anodised aluminium alloy
Tubing connectors: Stainless steel
Impeller: Polyacetal
Seals: "Viton"