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Fiedler Scientific Instruments, s.r.o.
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 **Cole-Parmer®**

Ismatec® Gear Pumps



High-performance drives with numerous features

- Magnetically driven pump heads provide smooth, accurate, pulseless fluid delivery
- Control speed and start/stop remotely via analog signal; RS-232 available on Reglo Digital and MCP-series drives
- Hermetically sealed and magnetically coupled pump heads offer leak- and contamination-free pumping
- Pump heads are available in a variety of chemical-resistant materials to handle a wide range of fluids
- Rated for continuous duty

Drive + Pump Head + Tubing =
Complete Pump System

ISMATEC®

ColeParmer.com

MASTERFLEX[®]
ISMATEC[®]

Reglo Digital Pumps



Reglo with Gear Head

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Gear Heads

Compatible with Micropump® A-mount and B-mount (suction shoe design and cavity style) gear pump heads, they offer flow ranges from 1.7 to 4680 mL/min; featuring continuous run, volume and time dispense modes, and flexible operational control via an intuitive 5" TFT/RGB touchscreen, MasterflexLive®, or analogue remote control.



Gear Pump Heads

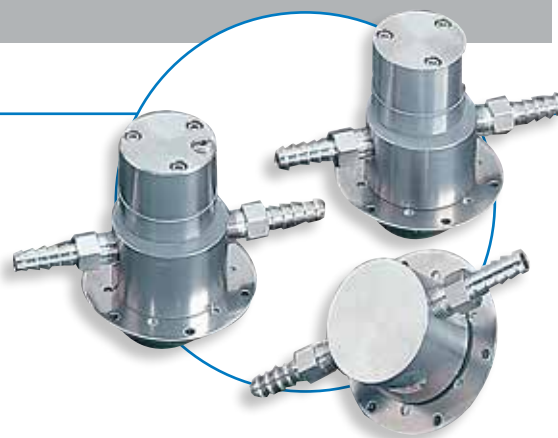
- Magnetic drive and static seals keep fluids securely inside and potential contaminants out
- Chemical resistant materials handle a wide range of materials
- Compact and easy to service
- B Mount pump heads

Suction Shoe Pump Heads

- Enhanced pumping performance at elevated differential pressures
- Suited for higher temperature ranges
- Not recommended for applications requiring suction lift

Cavity Style Pump Heads

- Excellent chemical resistance
- Smooth and precise flow
- Low friction
- Recommended for applications requiring a modest suction lift



Specifications

Port size: 1/8" NPT(F)

Max viscosity: 0.2 to 1500 cp

Suction lift:

Suction shoe: 12" H₂O at 3450 rpm

Cavity shoe: 24" H₂O at 1750 rpm

Duty cycle: continuous

Suction Shoe Pump Heads

Model	mL/rev	Flow rate* (mL/min)		Max differential pressure	Max system pressure	Gear material	Seals	Housing	Temperature range	Internal bypass	Catalog number
		Min ^{††}	Max								
GA-X21	0.017	0.85	102 [‡]	1.4 bar	21 bar	Graphite	PTFE	316 SS	-50 to 350°F (-46 to 177°C)	—	MK-74004-23
GA-V21	0.042	2.1	252 [‡]	2.8 bar	21 bar	Graphite	PTFE	316 SS	-50 to 350°F (-46 to 177°C)	—	MK-74004-29
GA-V23	0.084	4.2	504 [‡]	2.8 bar	21 bar	Graphite	PTFE	316 SS	-50 to 350°F (-46 to 177°C)	—	MK-74004-31
GA-T23	0.092	4.6	552 [‡]	5.2 bar	21 bar	PPS	PTFE	316 SS	-50 to 350°F (-46 to 177°C)	—	MK-74004-33
GA-V23	0.084	4.2	504 [‡]	5.2 bar	21 bar	PEEK	PTFE	316 SS	-50 to 350°F (-46 to 177°C)	—	MK-74004-73
GB-P25	0.58	29	3190 ^{††}	3.5 bar	21 bar	PPS	Viton®	316 SS	-20 to 350°F (-29 to 177°C)	Yes	MK-74004-19[‡]
GB-P25	0.58	29	3190 ^{††}	3.5 bar	21 bar	PEEK	Viton	316 SS	-20 to 350°F (-29 to 177°C)	—	MK-74004-77
GB-P35	1.17	58.5	6435 ^{††}	3.5 bar	21 bar	PPS	Viton	316 SS	-20 to 350°F (-29 to 177°C)	Yes	MK-74004-21[‡]

Organic solvents for corrosive media

GB-P35	1.17	58.5	6535 ^{††}	3.5 bar	21 bar	PEEK	Kalrez®	316 SS	-20 to 350°F (-29 to 177°C)	Yes	MK-74004-52
GA-V23	0.084	4.2	5005 [‡]	2.8 bar	21 bar	Graphite	PTFE	Hastelloy-C276	-50 to 350°F (-46 to 177°C)	—	MK-74004-53

*Flow rates without differential pressure.

†Order centering flange 78003-91 and screws 78003-93 for use with BVP-Z and MCP-Z drives.

‡Based on max rpm of 6000.

††Based on max rpm of 5500.

**Based on min rpm of 50.

Cavity Shoe Pump Heads

Model	mL/rev	Flow rate** (mL/min)		Max differential pressure	Max system pressure	Gear material	Seals	Housing	Temperature range ^{†††}	Internal bypass	Catalog number
		Min	Max								
GJ-N23	0.64	32	3520 ^{†††}	3.5 bar	21 bar	PTFE	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	Yes	MK-74004-01
GJ-N23	0.64	32	3520 ^{†††}	3.5 bar	21 bar	PTFE	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	—	MK-74004-09
GJ-N23	0.64	32	3520 ^{†††}	5.6 bar	21 bar	PEEK	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	—	MK-74004-75
GJ-N25	0.91	45.5	5005 ^{†††}	3.5 bar	21 bar	PTFE	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	—	MK-74004-11
GJ-N23	0.64	32	3520 ^{†††}	5.2 bar	21 bar	PPS	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	Yes	MK-74004-05
GJ-N23	0.64	32	3520 ^{†††}	5.2 bar	22 bar	PPS	PTFE	316 SS	-50 to 130°F (-46 to 54°C)	—	MK-74004-17

For corrosive media

GJ-N23	0.64	32	3520 ^{†††}	3.5 bar	21 bar	PTFE	PTFE	Hastelloy-C276	-50 to 130°F (-46 to 54°C)	—	MK-74004-57
GJ-N25	0.91	45.5	5005 ^{†††}	3.5 bar	21 bar	PTFE	PTFE	Hastelloy-C276	-50 to 130°F (-46 to 54°C)	—	MK-74004-59

**Flow rates without differential pressure.

†††Operating temperature up to 210°F (99°C) possible with other materials. Call our Application Specialists to order.

††††Based on max rpm of 5500.

Technical Specifications

Item number	Description	Speed Range (rpm)	Flow Range (mL/min)
78018-50	Reglo Digital Gear Pump Drive with MasterflexLive, 4000 rpm, 115 to 230 VAC	100 to 4000	1.7 to 4680

Specification	Description	Specification	Description
Speed control accuracy	+/- 0.1%	Digital	RJ-45 Ethernet and WiFi (for MasterflexLive Cloud connectivity), USB (for firmware upgrades)
Resolution	0.1 rpm	Power supply	Separate Universal Voltage input 90 to 260V, 24V out 90W max
Motor	BLDC with encoder	Enclosure materials	ABS Plastic housing with an aluminum chassis and aluminum bezel
Display	5" capacitive touchscreen, RGB with In-plane switching (wide viewing angle)	Approvals	CE, RoHS 2; Power supply is UL, cUL
Dimensions and weight	229 x 147 x 157 (L x W x H, mm) - 3.2kg 9 x 5.8 x 6.3 (L x W x H, inches) - 7lbs	IP rating	IP31
Rear panel controls & connections	RJ45, 25 pin serial port, on/off switch, USB port, power supply connection	Warranty	2 years

Drive + Pump Head + Tubing =
Complete Pump System

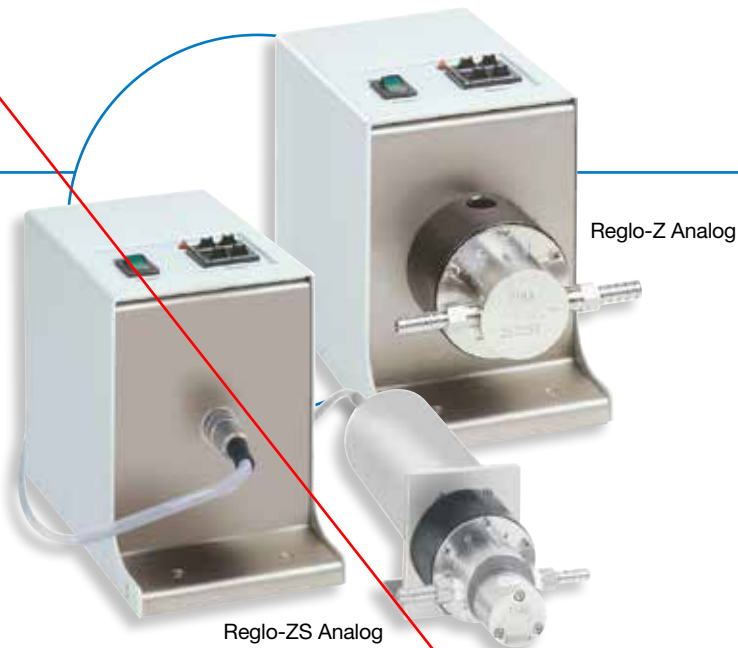
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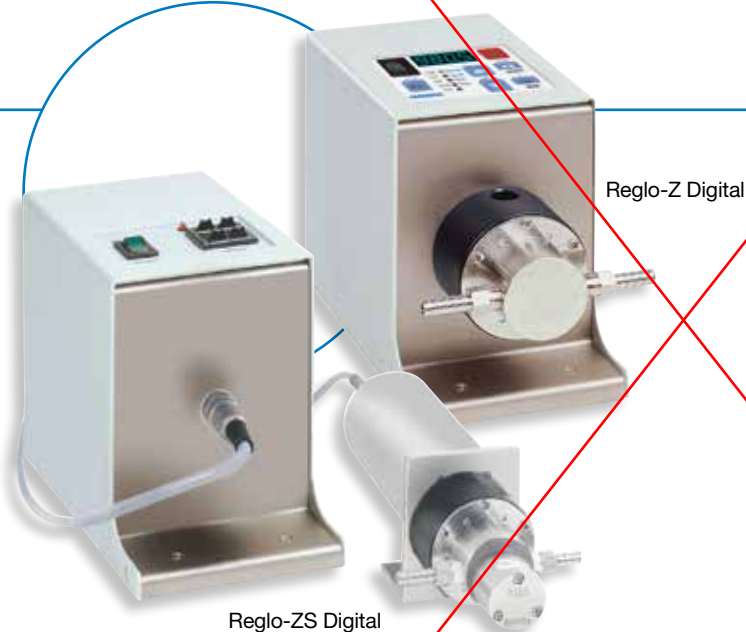
DISCONTINUED - NOT AVAILABLE

Reglo-Z/ZS Analog Drives



- Two-digit potentiometer provides a 100:1 turndown
- Four analog signal plus relay contact permit remote control from a variety of instruments
- **Reglo-Z Analog:** compact enough to fit in the palm of your hand
- **Reglo-ZS Analog:** modular design has drive and controller separated by a 6.5 ft (2 m) long cable

Reglo-Z/ZS Digital Drives



- Program pump for dispensing fluids by flow rate, volume, time or number of dispensing cycles
- Drip-free dispensing—program pump to draw back fluid
- RS-232 interface allow control via a PC
- **Reglo-Z Digital:** compact yet lets you operate in multiple modes
- **Reglo-ZS Digital:** modular design has drive and controller separated by a 6.5 ft (2 m) long cable

Ordering Information

Model	Reglo-Z Analog		Reglo-ZS Analog		Reglo-Z Digital		Reglo-ZS Digital	
	115 VAC, 60 Hz	230 VAC, 50 Hz	115 VAC, 60 Hz	230 VAC, 50 Hz	115 VAC, 60 Hz	230 VAC, 50 Hz	115 VAC, 60 Hz	230 VAC, 50 Hz
Catalog number	MK-78008-03	MK-78008-05	MK-78008-23	MK-78008-25	MK-78008-10	MK-78008-15	MK-78008-33	MK-78008-35
Programmable	No				Yes			
Speed	50 to 5000 rpm (indicated as 1 to 99%)				50 to 5000 rpm			
Resolution	0.1% via 2-digit potentiometer				1 rpm			
Flow rate settings	—				mL/min (flow), mL (dispensing)			
Remote control capabilities	Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 kHz Start/stop				RS-232 Speed output: 0 to 12 kHz Start/stop, autostart			
Protection rating	IP30				IP30			
Motor type	DC motor				DC motor			
Power consumption	50 W				75 W			
Size*	178 x 100 x 143 mm		178 x 100 x 143 mm (controller); 175 x 65 x 80 mm (drive)		178 x 100 x 135 mm		178 x 100 x 135 mm (controller); 175 x 65 x 80 mm (drive)	
Weight*	2.1 kg*		1.7 kg (controller); 0.7 kg* (drive)		1.7 kg*		1.2 kg (controller); 0.7 kg* (drive)	

*Without pump head

[MK-78016-91](#) Foot switch for Reglo-Z/ZS Analog drives. On/off control, 6 ft (1.8 m) cable

[MK-78016-93](#) Foot switch for Reglo-Z/ZS Digital drives. On/off control, 6 ft (1.8 m) cable

DISCONTINUED - NOT AVAILABLE

BVP-Z Standard Drive

- Economical yet versatile drive lets you adjust speed in 0.1% steps
- Press the MAX button for extra rpm and quick pump priming
- Electronic feedback system compensates for changes in load to maintain $\pm 1\%$ speed accuracy



MCP-Z Series Drives

- Dispense by time, volume, flow rate, batches with variable pause time, stored programs, roller backsteps, or number of dispensing cycles
- Use the RS-232 interface to automate your lab or operate independently via the keypad
- Digital display shows speed, flow rate, dispensing volume, dispensing time, and pause time
- Store and recall up to four programs
- **MCP-Z Process:** IP65-rated stainless steel housing is ideal for dusty, humid, or corrosive environments and cleanroom areas



Ordering Information

Model	BVP-Z Standard		MCP-Z Standard		MCP-Z Process	
	115 VAC, 60 Hz	230 VAC, 50 Hz	115 VAC, 60 Hz	230 VAC, 50 Hz	115 VAC, 60 Hz	230 VAC, 50 Hz
Catalog number	MK-78004-15	MK-78004-17	MK-78004-35	MK-78004-37	MK-78004-45	MK-78004-47
Programmable	No		Yes		Yes	
Speed	60 to 6000 rpm (indicated as 1 to 99.9%)		60 to 6000 rpm		60 to 6000 rpm	
Resolution	0.1% via 3-digit potentiometer		0.1 rpm		0.1 rpm	
Flow rate settings	—		$\mu\text{L}/\text{min}$, mL/min, L/min		$\mu\text{L}/\text{min}$, mL/min, L/min	
Remote control capabilities	Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 12 kHz Start/stop		RS-232 (1 in, 1 out), 1 analog Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 12 kHz Start/stop, autostart		RS-232 (1 in, 1 out), 1 analog Speed control: 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA Speed output: 0 to 10 VDC or 0 to 12 kHz Start/stop, autostart	
Protection rating	IP30		IP30		IP65	
Motor type	DC motor		DC motor		DC motor	
Power consumption	150 W		150 W		200 W	
Size*	220 x 155 x 260 mm		220 x 155 x 260 mm		260 x 160 x 262 mm	
Weight*	5.7 kg		6.4 kg		6.9 kg	

*Without pump head

For BVP-Z Drive

[MK-78016-91](#) Foot switch for start/stop operation, 6 ft (1.8 m) cable

For MCP-Z series Drives

[MK-78003-07](#) Foot switch for start/stop operation, 6 ft (1.8 m) cable

[MK-78098-02](#) Labworldsoft® software, requires Windows® 3.1 or higher, Windows 95

[MK-78096-22](#) Interface card for controlling up to eight instruments, ISA

[MK-78098-24](#) Interface card for controlling up to eight instruments, PCI

[MK-78098-26](#) Adapter for 78098-22, 25-pin (female) to 9-pin (male)

[MK-78002-92](#) Extension cable for 78098-26, 9-pin (female) to 9-pin (male)

For Both BVP-Z and MCP-Z series Drives

[MK-78003-91](#) Centering flange for use with suction shoe style pump heads M10022 and M10023

[MK-78003-93](#) Four flat-headed screws, M 2.5 x 8. Required to mount centering flange to drives

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