






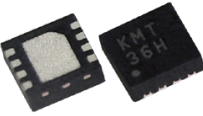


MEDICAL PUMP SOLUTION GUIDE

Human bodies and the medical devices that support them rely on liquids to flow continuously without interruption. Sensors are embedded in a variety of medical pump and flow applications and are utilized to confirm continuous and accurate flow, detect occlusions and bubbles in IV lines, and measure liquid levels. Robust sensors that are easy to integrate and provide superior performance and reliability are critical components in a wide range of medical diagnostic and treatment applications including infusion pumps, hemodialysis and blood flow monitoring.

TE CONNECTIVITY ADVANTAGES

- Customization Capability
- Manufacturing Scale
- Medical Experience
- Portfolio Breadth

SENSOR TECHNOLOGY	APPLICATION(S)	FEATURED PRODUCT	KEY PRODUCT FEATURES	BENEFITS
Force 	Force Measurement Detect occlusion in IV line	FS20	Small size	Fits a wide range of applications; excellent for mobile products
			Robust: High Over-Range Capability	Reliable operation even in non-standard operating conditions
			Essentially unlimited cycle life expectancy	Reliable operation over many years of service
Force 	Force Measurement Load and compression sensing for pumps and weighing	FC22	High reliability	Microfused technology provides reliable operation and essentially unlimited cycle life
			Fast response time	Responds quickly to changes in force or loads
			Low off-center errors	Designed for reliable and accurate sensing with simple setup
Force 	Force Measurement Designed for embedded force measurement for demanding medical applications	FX29	mV or amplified analog outputs	Flexible output types; simplifies interface
			Optional I2C interface	Digital output for direct microcontroller interface
			Robust: High over range capability	Reliable operation even in non-standard operating conditions
Ultrasonic 	Air Bubble Detection Positively identify the presence of a break in flow of any type of liquid	AD-102	Detects bubble size as small as 25% of tubing inner diameter	Ensure accurate, reliable bubble detection, enhancing patient safety
			Customizable tubing sizes ranging from 3mm to 10mm	Offers versatility and customization for a wider range of medical applications
			High noise immunity to EMI/RFI	Provides accurate and reliable results even in noisy environments
Temperature 	Temperature Measurement Monitoring and control of temperature of infusion liquids	NTC Stainless Steel Assembly	Precision NTC thermistor sensing element	Provides accurate and reliable temperature measurements over a wide operating range
			Customization for OEM applications	Allows for flexible designs to accommodate customer's specific needs; thermistor values, threads, lead lengths and connectors
			Robust, compact design	Offers years of reliable sensing in a cost-effective design
Position 	Position Monitoring Precise position feedback for a range of motors and pumps	KMT36H	Suited for harsh environments	Magnetic sensing principle allows use in extreme environments
			Contactless absolute angular measurement	No wear items allow for reliable operation and long life
			High accuracy	Accuracy better than $\pm 0.5^\circ$ which allows precise movement

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