






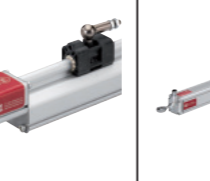
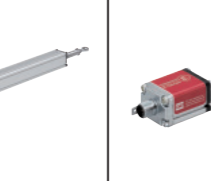
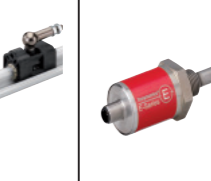




Temposonics® Magnetostrictive Position Sensors for Industrial Applications

Whether your application is industrial or medical, harsh environment or commercial, extra-long or ultra-space sensitive, standard or custom, MTS Sensors have the features, options and flexibility to work in your design.

	R-Series Smart sensors with ruggedness, highest accuracy and a large variety of designs & interfaces				G-Series Sensors with analog or Start/Stop output for standard applications			E-Series Sensors designed for applications requiring simple and low cost position feedback					
													
Sensor Model	RH Pressure-resistant stainless steel rod sensor for fluid technology	RP Robust aluminum profile for industrial manufacturing	RD4 Separate electronics + pressure-resistant rod for limited space	RF Smart sensor with flexible measuring rod	GH/GP Simple and robust sensor	GT High reliability redundant triple/twin sensor	GBS High pressure resistant sensor rod	EP Aluminum profile for industrial automation technology	ER Profile sensors with "Rod & Cylinder" actuation and integral electronics	EL Low profile sensor for applications where tight mounting space is a critical factor	EH High pressure rod with compact waterproof stainless steel housing	EP2 Non-contact linear position sensor to substitute linear potentiometers	
Features	Displacement, Velocity (except DeviceNet) Simultaneous Multi Position Measurement (Multi Magnet Measurement) Analog up to 2 positions; SSI differential measurement up to 2 positions; CAN, Profibus, EtherCAT, EtherNet/IP up to 20 positions; Profinet RT up to 19 positions				Displacement Simultaneous Multi Position Measurement Start/Stop up to 9 positions			Displacement, Velocity (Output dependent) Rugged profile Rod-and-cylinder style and competitive with potentiometers For tight mounting space Cost effective & compact rod type Flat Profile					
Output	Voltage : 0 to 10V, 10 to 0V, -10 to +10V, +10 to -10V Current : 4 to 20mA, 0 to 20mA, 20 to 4mA, 20 to 0mA SSI : Binary or Gray, Data Length 24bit · 25bit · 26bit, 32bit (Binary only) Fieldbus : CANbus, CANopen, Profibus, Profinet RT, EtherCAT, EtherNet/IP, DeviceNet (except RD4)				Voltage : 0 to 10V, 10 to 0V, -10 to +10V, +10 to -10V Current : 4 to 20mA, 0 to 20mA, 20 to 4mA, 20 to 0mA Start/Stop pulse Pulse Width Modulation (PWM)			Voltage : 0-10V, 10-0V Current : 4 (0) -20mA, 20-4 (0) mA Start/Stop pulse SSI : 24/25bit Binary or Gray, CANopen (ER : Please contact factory)					
Measuring Range	Analog : 50-7600mm Digital : 25-7600mm	Analog : 50-5000mm Digital : 25-5000mm	0.1-20m >15m: Contact Factory	Analog : 50-2500mm Digital : GH : 50-7600mm GP : 50-5000mm	50-2900mm	25-3250mm	Analog, SSI, CANopen : 50-2500mm Start/Stop : 50-3000mm	50-1500mm	Analog, SSI, CANopen : 50-2500mm Start/Stop : 50-3000mm	50-2500mm	Analog : 50-2500mm Start/Stop : 50-3000mm		
Non-Linearity	<±0.01%F.S. (Option internal linearization)		<±0.02%F.S. (Contact factory for internal linearization of RD4)		<±0.02%F.S.			<±0.02%F.S. (Min. ±60μm)				<±0.02%F.S.	
Resolution (Please see P.9 for velocity)	Analog : 16bit/0.0015%, SSI : 0.5μm, EtherCAT, Profibus, Profinet RT, EtherNet/IP : 1μm, CAN, DeviceNet : 2μm, RD4 : 5μm				Analog : infinite Digital : 5μm	infinite	16bit (min. 1μm)	Analog : infinite Start/Stop : 0.1/0.01/0.005mm SSI : 20μm CANopen : 10μm				Analog : infinite Start/Stop : 5μm~	
Repeatability	<±0.001%F.S.				<±0.001%F.S.			<±0.005%F.S.					
Update Time / Sampling Rate (1 magnet) (Please see P.9 for details.)	Analog : 0.5ms (2KHz) CANbus/DeviceNet : 0.5ms (2KHz) EtherCAT : Stroke dependent, EtherNet/IP : 2ms (0.5KHz) Profibus : 0.5ms (2KHz), Profinet RT : 1KHz, SSI : 0.27ms (3.7KHz), 10KHz synchronous mode				Analog : <1ms typ (>1KHz) Start/Stop : max 2800m/s (length, controller dependent) e.g. 1200mm : 0.42ms (2.4KHz) + Controller processing time	<2.5ms	Up to 1200mm : 0.5ms Up to 2400mm : 1ms >2400mm : 2ms	Analog : >0.33ms typ (<3KHz) Start/Stop : max 2800m/s (length, controller dependent) e.g. 1200mm : 0.42ms (2.4KHz)+controller processing time SSI : 0.27ms (3.7KHz) CANopen : 1ms (1KHz)				Analog : <3KHz Start/Stop : controller dependent	
Temperature Coefficient	Analog : <30ppm/°C, SSI, CAN, Profibus, EtherCAT, Profinet RT, EtherNet/IP, DeviceNet : <15ppm/°C				TBD			SSI, CANopen : <15ppm/°C					-
Shock Test	100G single hit (IEC60068-2-27)				100G single hit (IEC60068-2-27)			100G single hit (IEC60068-2-27)					
Vibration Test	15G 10-2KHz (IEC60068-2-6), 30G (option)	10G 10-2KHz (IEC60068-2-6)	5G 10-150Hz (IEC60068-2-C)	15G 10-2KHz (IEC60068-2-6), 30G (option/except GT)	5G 10-2KHz (IEC60068-2-6)	15G 10-2KHz (IEC60068-2-6)	Analog, Start/Stop, CANopen : 15G 10-2KHz SSI : 10G 10-2KHz (IEC60068-2-6)	Analog, Start/Stop 10G 10-2KHz SSI : 5G 10-2KHz (IEC60068-2-6)	Analog, Start/Stop, CANopen : 15G 10-2KHz SSI : 10G 10-2KHz (IEC60068-2-6)	15G 10-2KHz (IEC60068-2-6)	8G 10-2KHz (IEC60068-2-6)		
Pressure Rating	35MPa 70MPa peak 80MPa (option)	-	35MPa 70MPa peak	-	35MPa 70MPa peak (GH)	35MPa 69MPa peak	35MPa 70MPa peak	-	-	-	Analog, Start/Stop φ7mm : 30MPa 45MPa peak φ10mm : 35MPa 53MPa peak SSI, CANopen φ7mm : 30MPa 35MPa peak φ10mm : 35MPa 45MPa peak	-	
Protection	IP67 IP68 (Cable outlet) IP68/IP69K (in SSH housing)	IP65	Sensor Electronics IP67 Side Cable Entry IP65 Bottom Cable Entry IP30	IP30 Waterproof Rod option	GH : IP67 IP68 (Cable outlet) IP68/IP69K (in SSH housing) GP : IP65	IP67 IP68 (Cable outlet)	IP67 IP68 (Cable outlet)	IP67			IP69K	IP67	
Input Voltage	24VDC (-15/+20%)				24VDC (-15/+20%), 9-28.8V (option)	24VDC (-15% / +20%)		24VDC (-15%/+20%)					
Operation Temperature	-40°C to +75°C, 0°C to +75°C (EtherNet/IP, Profinet RT)				-40°C to +80°C	-40°C to +75°C	-40°C to +90°C (option -40°C to +100°C)	-40°C to +75°C, -25°C to +75°C (ER SSI)					
Current Consumption	Analog, SSI : 100mA typ CAN, Profibus, DeviceNet : 90mA typ EtherCAT : 80mA typ, EtherNet/IP, Profinet RT : 110mA typ				100mA typ			100mA Stroke dependent		Analog : 50-140mA, Start/Stop : 50-100mA SSI : 90mA, CANopen : 90mA (EP, EL), 40-60mA (EH)			
EMC	EMI : EN61000-6-4, EMS : EN61000-6-2, ESD : EN61000-4-2, RFI : EN61000-4-3 Electrical fast transient / burst immunity test : EN61000-4-4 Immunity to conducted disturbances, induced by radio-frequency fields : EN61000-4-6 Criterion A, CE-qualified				EMI : EN61000-6-4, EMS : EN61000-6-2 CE-qualified			EMI : EN61000-6-4 EMS : EN61000-6-2 CE-qualified (SSI, CANopen : See datasheet)					
Option	TIIS Explosion-proof ATEX Pressure-resistant and explosion-proof ATEX Explosion proof	ATEX Explosion proof	Head to Rod Cable up to 5m	Waterproof rod cover	GH : ATEX Pressure-resistant and explosion-proof ATEX Explosion proof GP : ATEX Explosion proof		Wireless programming				SUS 316		

Functions and the approved certification depend on the sensor model. Please contact factory for other measuring ranges, materials, operating environments, etc.