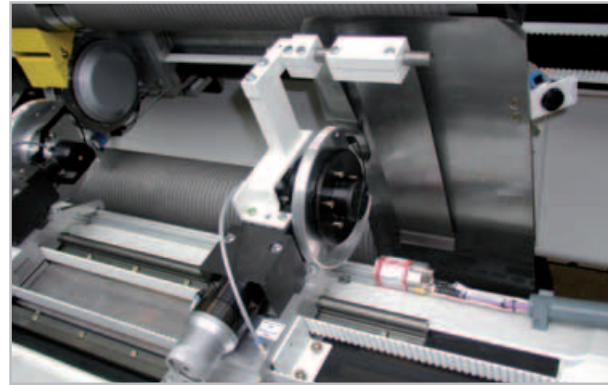


# Temposonics®

Absolute, Non-Contact Position Sensors



## THE APPLICATIONS

### Magnetostriction: The best choice for your application

You are under constant pressure to improve your products, reduce your costs and maintain a competitive edge. The choice you make must provide accuracy and repeatability. You need modular solutions that can adapt to your specific application and you need a price/performance ratio that delivers value.

By choosing MTS Temposonics sensors, you're choosing the leader in magnetostrictive sensors.

And that means you have a huge competitive advantage.

### Increased productivity through innovation

MTS sensors do more than just measure position. Intelligent electronics move some control functions to the sensor, dramatically increasing productivity. When needed, MTS can tailor application-specific software to meet your needs.

[www.mtssensor.com](http://www.mtssensor.com)  
[www.temposonics-shop.de](http://www.temposonics-shop.de)



ETHERNET  
POWERLINK

EtherCAT

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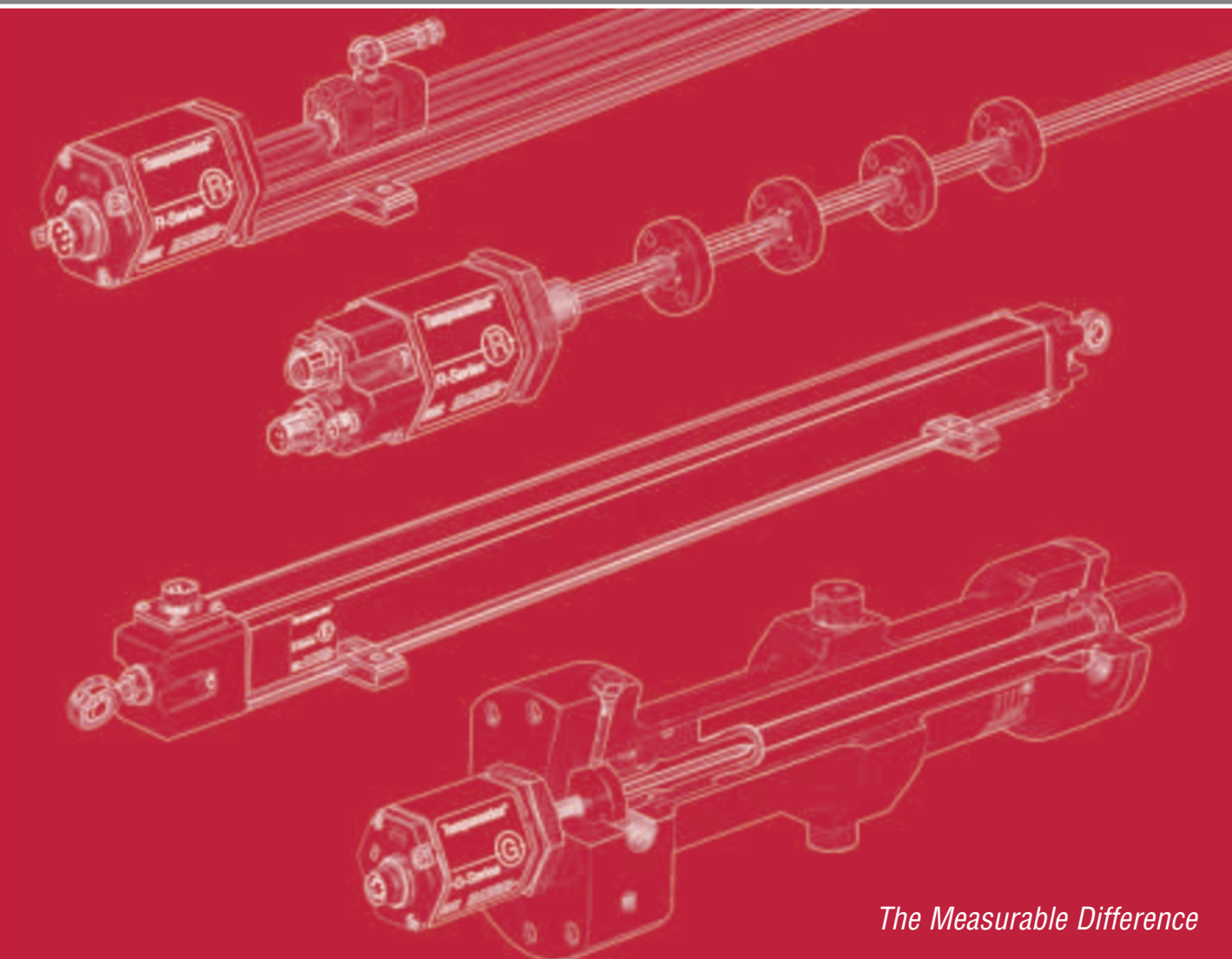


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## Product Overview Industrial Sensors



*The Measurable Difference*

## THE COMPANY



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MTS Systems Corporation, Minneapolis, USA



MTS Sensor Technologie  
Lüdenscheid, Deutschland



MTS Sensors Division  
Cary (North Carolina), USA



MTS Sensors Technology Corp.  
Tokyo, Japan

### The World of MTS - Precision and Reliability

Following the founding of **MTS Systems Corporation** in 1951, the company rapidly developed into a leading supplier of intelligent hardware and software products in the fields of test and simulation systems and in measuring and automation technology. Today MTS Systems Corporation has over **2335 employees** worldwide – **355** of whom are employed by **MTS Sensors** at three sites in the **USA (Cary, N.C.), Germany (Lüdenscheid)** and **Japan (Tokyo)**. At MTS, intensive basic research is efficiently merged with a consistent focus on practical requirements. The results are innovative solutions for a wide range of potential industrial and non-industrial applications.

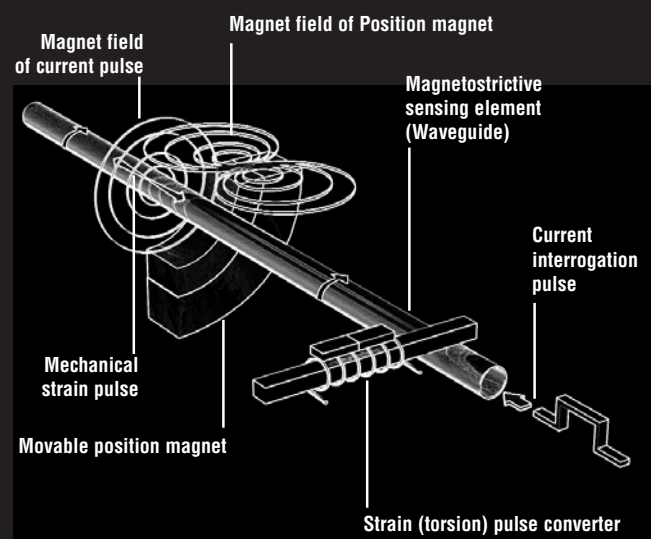
## THE PRINCIPLE

### Magnetostriction - A Milestone in Measurement Technology

The heart of MTS sensors is the ferromagnetic measuring element, also known as the waveguide, and a movable position magnet that generates a direct-axis magnetic field in the waveguide.

When a current or interrogation pulse passes through the waveguide, a second magnetic field is created radially around the waveguide. The interaction between the magnetic field in the waveguide and the magnetic field produced by the position magnet generates a strain pulse which travels at a constant ultrasonic speed from its point of generation, the measurement point, to the end of the waveguide where it is transformed into an electric pulse in the sensor element. The resulting signal is processed by the specialized electronics of the Temposonics sensor.

With our extensive know-how of ferromagnetic materials, magnetic effects and ultrasonic processes, MTS remains unrivalled in performance standards for non-contacting position measurement of the highest precision.



## COMPLETE DESIGN FLEXIBILITY WITH MAXIMUM PERFORMANCE

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 highest accuracy and a large variety of designs and interfaces			G-SERIES Sensors with analogue or Start/Stop output for standard applications			E-SERIES Sensors designed for applications requiring simple and economical position feedback			
<b>Sensor Model</b>	<b>RH</b> Pressure-resistant stainless steel rod sensor for fluid technology	<b>RP</b> Robust aluminum profile for industrial manufacturing	<b>RF</b> Multifunctional industrial sensor with flexible measuring rod	<b>GH</b> Pressure-resistant stainless steel rod sensor for automation	<b>GP</b> Aluminum profile, perfect sensor for mechanical engineering	<b>GB</b> Pressure-resistant rod version for hydraulic cylinders	<b>EP</b> Aluminum profile for industrial automation technology	<b>ER</b> Profile sensors with "Rod & Cylinder" actuation and integral electronics	<b>EP2</b> Contactless linear position sensor to substitute linear potentiometers	<b>EH</b> Compact rod version designed for installation into hydraulic cylinders
<b>Output</b>	<b>Voltage:</b> 0...10 V; 10...0 V; -10...+10 V Additional output ranges available between -10 and +10 V.			<b>Voltage:</b> 0...10 V; 10...0 V; -10...+10 V; +10...-10 V			<b>Voltage:</b> 0...10 V and 10...0V		<b>Voltage:</b> 0...10 V	
	<b>Current:</b> 0/4...20 mA; 20...4/0 mA Additional output ranges available between 0 and 20 mA.			<b>Current:</b> 0/4...20 mA; 20...4/0 mA			<b>Current:</b> 4...20 mA or 20..4 mA		<b>Current:</b> 4...20 mA	
	<b>SSI:</b> Gray- or Binary-Format; Data length selectable; synchronous / asynchronous measurement; optional Parity- and Error Bit.			-			<b>SSI:</b> Gray or Binary; 25 or 24 Bit, synchronous and asynchronous measurement		-	
	<b>Fieldbus:</b> CANbus; CANOpen; Profibus DP-V1; DNet; PowerLink; EtherCAT			-			-		-	
<b>Measuring Range</b>	25-7600 mm	25-5000 mm optional up to 6200 mm	0,25-20 m	<b>Analog:</b> 50-2500 mm <b>Digital:</b> 50-7600 mm	<b>Analog:</b> 50-2500 mm <b>Digital:</b> 50-5000 mm	<b>Analog:</b> 50-1500 mm <b>Digital:</b> 50-3250 mm	<b>Analog:</b> 50-1500 mm <b>Digital:</b> 50-3250 mm	75-1500 mm	100-1500 mm in fixed length	50...1000 mm
<b>Resolution</b>	<b>Analog:</b> 16 Bit; 0,0015 % (Minimum 10 µm)			<b>Analog:</b> infinite, controller dependent and restricted by output ripple (0,01 %)			<b>Analog:</b> infinite, controller dependent and restricted by output ripple (0,01 %)		<b>Analog:</b> infinite, controller dependent and restricted by output ripple (0,02 %)	
	<b>Digital:</b> Can 2 µm; SSI, Profibus, PowerLink, EtherCAT 1 µm			<b>Digital:</b> 5 µm dependent on controller		<b>Digital:</b> 10 µm		<b>Digital:</b> 10 µm dependent on controller		-
<b>Features</b>	<b>Velocity Measurement</b>			-			-		-	
	<b>Simultaneous Multi Magnet Measurement</b> Analog 2 positions; CAN, Profibus, PowerLink, EtherCAT up to 20 positions; SSI differentiation measurement of 2 positions			<b>Simultaneous Multi Magnet Measurement:</b> 15 positions on Start / Stop			-		-	
	-			-			-		Parameter upload on Start / Stop	
<b>Diagnostic</b>	<b>Diagnostics LEDs</b> for general information and troubleshooting. Sensor parameters can be diagnosed and changed with programming tool. Programmable sensor parameters.		-	<b>Diagnostics LEDs:</b> Diagnostic data online via programming tool.		-		-		

### CUSTOMIZED PRODUCTS AND ACCESSORIES

(Product information see data sheet)

