

Temposonics®

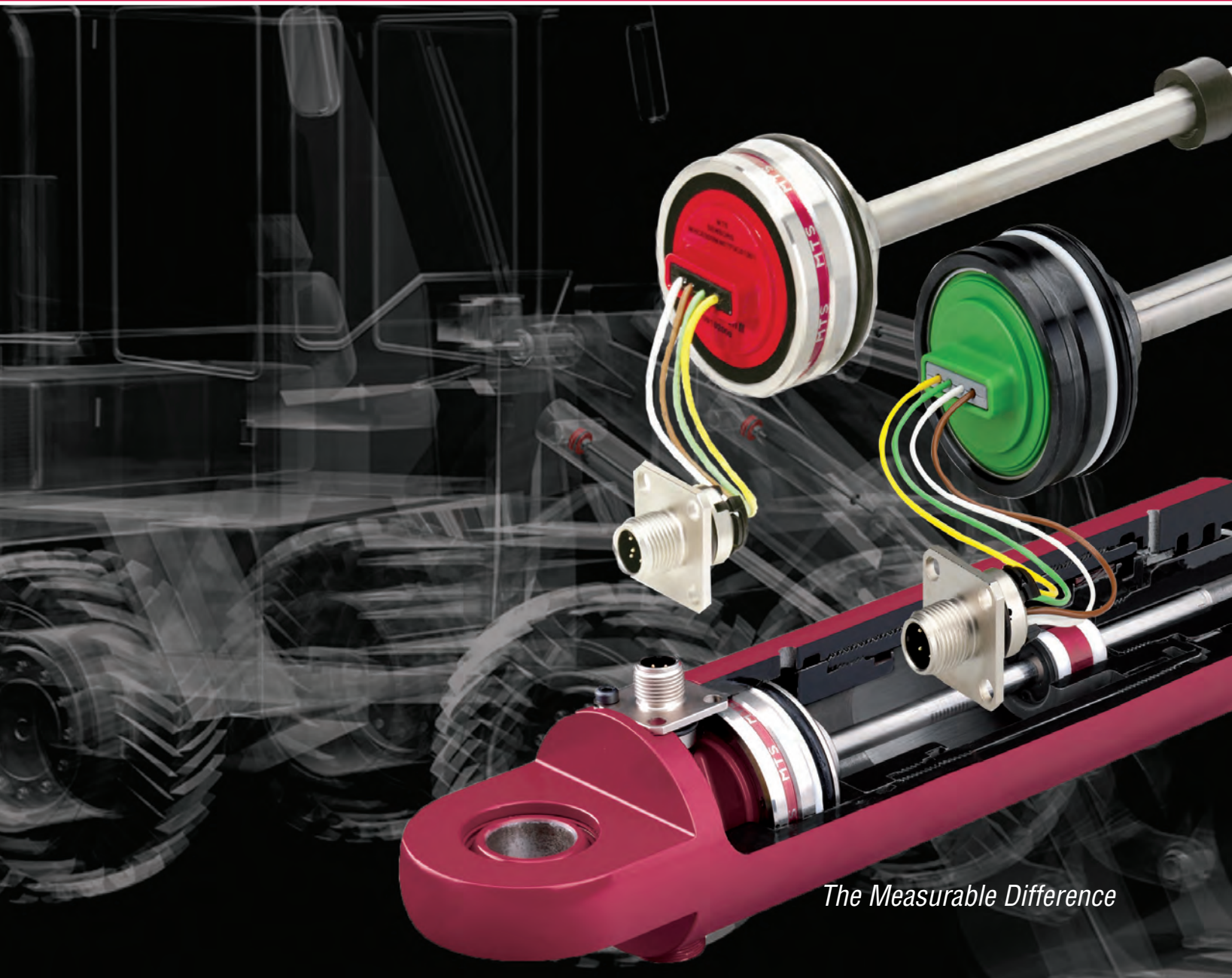


Magnetostrictive, Absolute, Non-contact
Linear-Position Sensors

MH Series Sensors

Document Part Number
551115 Revision D

Mobile Hydraulic Product Overview



The Measurable Difference

MH-SERIES

Embedded Sensors for In-Cylinder Design The sensor will be fully protected by the cylinder housing and resistant against environmental influences (Water, Dirt, EMC)



Model MH
Analog, Digital
& PWM Outputs



Model MH Agri
Analog Output



Model MSR
Analog Output

AVAILABLE OUTPUT	Voltage, Voltage SIL 2, Current, CANOpen, CANOpen Safety CAN J1939 & PWM	Voltage	Voltage, Current
MEASURING RANGE: (POSITION & VELOCITY)	50 mm (2 in.) to 5000 mm (200 in.) ± 1.0 m / sec (CAN only)	50 mm (2 in.) to 1000 mm (40 in.) -	50 mm (2 in.) to 500 mm (20 in.) -
LINEARITY (ACCURACY)	≤ ± 0.1 mm @ ≤ 250 mm ± 0.8 mm @ ≤ 2500 mm ≤ ± 1.6 mm @ ≤ 5000 mm	≤ ± 0.2 mm @ ≤ 250 mm ± 0.8 mm @ ≤ 1000 mm	≤ ± 0.1 mm @ ≤ 250 mm ≤ ± 0.6 mm @ ≤ 1500 mm
RESOLUTION	Varies by output (see data sheet)	± 0.25 mm typical	0.1 - 0.4 mm (length dependent)
REPEATABILITY	± 0.2 mm (± 0.10 mm CAN only)	± 0.40 mm	± 0.2 mm
OPERATING TEMPERATURE	-40 °C (-40 °F) to 105 °C (221 °F)		
PRESSURE RATING	Rod diameter 10 mm: Operating = 350 bar / Pmax. = 450 bar Rod diameter 7 mm: Operating = 300 bar / Pmax = 400 bar	Rod diameter 10 mm: Operating = 300 bar / Pmax. = 400 bar	-
SHOCK RATING	IEC 60068-2-27, 100 g Single Hit	IEC 60068-2-27, 50 g Single Hit	
VIBRATION RATING	IEC 60068-2-6 (10 to 2000 Hz) Rod diameter 10 mm to 25 g (rms) Rod diameter 7 mm to 15 g (rms)	IEC 60068-2-6 (10 to 2000 Hz) Rod diameter 10 mm to 20 g (rms)	IEC 60068-2-6 (10 to 2000 Hz) 15 g (rms)
INGRESS PROTECTION	IP67 (IP69K with M12 x 1 connector attached)		
ELECTRICAL INSTALLATION	Operating voltage: 12/24 Vdc Operating range: 8 to 32 Vdc Power Consumption: < 1 W Electrical isolation: 500 Vdc (DC ground to machine ground) Polarity protection: -36 Vdc Overvoltage protection: 36 Vdc	Operating voltage: 12 Vdc Operating range: 8 to 16 Vdc Power Consumption: < 1 W Electrical isolation: 500 Vdc (DC ground to machine ground) Polarity protection: -36 Vdc Overvoltage protection: 36 Vdc	Operating voltage: 12/24 Vdc Operating range: 8 to 32 Vdc Power Consumption: < 1 W Electrical isolation: 500 Vdc (DC ground to machine ground) Polarity protection: -36 Vdc Overvoltage protection: 36 Vdc
EMI (IMMUNITY ONLY)	ISO 11452-2 (Antenna Method) ISO 11452-4 (Bulk Current Injection) IEC 61000-4-3 (Radio Frequency Interference) IEC 61000-4-6 (Conducted Disturbances) IEC 61000-4-4 (Burst) IEC 61000-4-8 (Magnetic Fields)		

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Embedded Sensors for In-Cylinder Design The sensor will be fully protected by the cylinder housing and resistant against environmental influences (Water, Dirt, EMC)



Model MT
Redundant Sensor
With 2 individual Analog Outputs



Model MS
In-cylinder Design
With Voltage and Current Outputs



Model MB
Compact Design
For External Assembly

Voltage & Current	Voltage & Current	Voltage
50 mm (2 in.) to 1500 mm (59 in.)	50 mm (2 in.) to 2000 mm (79 in.)	72 mm (3 in.) to 250 mm (9 in.)
-	-	-
≤ ± 0.1 mm @ ≤ 250 mm ≤ ± 0.6 mm @ ≤ 1500 mm	≤ ± 0.1 mm @ ≤ 250 mm ± 0.8 mm @ ≤ 2500 mm	≤ ± 0.25 mm @ ≤ 250 mm
0.1 - 0.4 mm (length dependent)	0.1 - 0.6 mm (length dependent)	≤ ± 0.25 mm @ ≤ 250 mm
± 0.20 mm	± 0.20 mm	± 0.25 mm
-40 °C (-40 °F) to 105 °C (221 °F)		-40 °C (-40 °F) to 85 °C (185 °F)
Rod diameter 10 mm: Operating = 350 bar / Pmax. = 450 bar	Rod diameter 7 mm: Operating = 300 bar / Pmax. = 400 bar	Rod diameter 8 mm: Operating = 300 bar / Pmax. = 400 bar
IEC 60068-2-27, 100 g Single Hit		IEC 60068-2-27, 50 g Single Hit
IEC 60068-2-6 (10 to 2000 Hz) Rod diameter 10 mm to 10 g (rms)	IEC 60068-2-6 (10 to 2000 Hz) Rod diameter 7 mm 15 g (rms)	IEC 60068-2-6 (10 to 2000 Hz) Rod diameter 8 mm 15 g (rms)
IP67 (IP69K with M12 x 1 connector attached)		
Operating voltage: 12/24 Vdc Operating range: 8 to 32 Vdc Power Consumption: < 1 W Electrical isolation: 500 Vdc (DC ground to machine ground) Polarity protection: -36 Vdc Overvoltage protection: 36 Vdc		Operating voltage: 12 Vdc Operating range: 8 to 15 Vdc Power Consumption: < 1 W Electrical isolation: 500 Vdc (DC ground to machine ground) Polarity protection: -30 Vdc Overvoltage protection: 30 Vdc
ISO 11452-2 (Antenna Method) ISO 11452-4 (Bulk Current Injection) IEC 61000-4-3 (Radio Frequency Interference) IEC 61000-4-6 (Conducted Disturbances) IEC 61000-4-4 (Burst) IEC 61000-4-8 (Magnetic Fields)		ISO 11452-2 (Antenna Method) ISO 11452-5 (Stripline Method)

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