



**SENSOR SOLUTIONS FOR
TEST & MEASUREMENT
FROM TE CONNECTIVITY**

SENSOR SOLUTIONS FOR TEST AND MEASUREMENT FROM TE CONNECTIVITY

TE Connectivity (TE) is a global technology leader providing sensor solutions that help businesses, organizations and government entities, test and measure their products and innovations with accuracy and precision. Our portfolio of test and measurement (T&M) sensors is one of the most comprehensive in the industry. With sensor solutions that cut across four major categories—Pressure, Position, Vibration and Force—we are able to leverage these technologies in developing customized solutions for a wide range of market applications.



Through relationships, TE provides a consultative approach, combining a depth of technical expertise with industry understanding to address specific T&M requirements. We couple this with a commitment to high quality service, confirming our customers proceed with confidence.

In addition, our T&M sensor solutions are fully configured and shipped with calibration certificates to expedite test and measurement procedures. By accelerating go-to-market timeframes and making sure all products are designed and manufactured to recognized safety and performance standards, TE helps to transform concepts into smart, connected creations.



TEST & MEASUREMENT APPLICATION SOLUTIONS

TE has established a global reputation for the development of T&M solutions, OEMs around the world have come to rely on TE innovations. Our T&M solutions are designed and manufactured to exacting specifications, often on a custom basis. Together with our customers, we work to solve today's biggest application challenges in new and creative ways. Applications include:

- AERODYNAMIC RESEARCH & FLIGHT TESTING
- AUTOMOTIVE DESIGN TESTING
- AUTOMOTIVE SAFETY TESTING
- ENVIRONMENTAL MONITORING/WATER MONITORING
- TEST EQUIPMENT & INSTRUMENTATION
- TRAFFIC SENSORS

SENSOR SOLUTIONS

- FORCE
- POSITION
- PRESSURE
- RATE & INERTIAL
- TEMPERATURE
- SCANNERS & SYSTEMS
- TORQUE
- TRAFFIC
- VIBRATION

QUALITY CERTIFICATIONS

- AS 9000B
- ATEX
- EN 9100
- EN 13980
- ISO 14001
- ISO 17025
- ISO 9001
- NADCAP WELDING & BRAZING
- NASA QUALIFIED



FORCE SENSORS

AUTOMOTIVE DESIGN AND TEST SENSORS



MEAS EL20

Non-linearity	±0.5% to 3% FS
Output / Span	20 mV (0.5 to 4.5 V optional)
Ranges N (Lbf)	5K to 25K (1K to 5K)
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> Smoothed edge design and optional slotted titanium axles eliminate drag errors and dummy damage



MEAS FN2114

Non-linearity	±1% FS
Output / Span	15 to 20 mV (4 V optional)
Ranges N (Lbf)	200 to 2500N (40lbf to 500lbf)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none"> High accuracy Compact Rugged design



MEAS FN4055

Non-linearity	±0.25% FS
Output / Span	20 mV
Ranges N (Lbf)	100 to 300N (20 to 60)
Temperature Range	-40 °C to 120°C
Unique Features	<ul style="list-style-type: none"> Low operating ranges Protected against overload Compatible with most seat belts



MEAS FN7080

Non-linearity	±0.3% FS
Output / Span	±7.5 mV (4 V; ±5 V optional)
Ranges N (Lbf)	50 to 500 (10 to 100)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none"> Measures force in three directions Replaces gear knob Ease of mounting

LOAD CELLS

Test and Measurement Miniature



MEAS ELAF

Non-linearity	±0.25% FS
Output / Span	100 mV (0.5 - 4.5 V optional)
Ranges N (Lbf)	50 to 10K (10 to 2K)
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> Low cost Low off-axis response NIST traceable calibration provided



MEAS XFL212R

Non-linearity	≤ ±0.5% FS
Output / Span	100 mV
Ranges N (Lbf)	5 to 500 (1 to 100)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> Extremely flat Integrated load button Small diameter



MEAS XFTC300 Series

Non-linearity	≤ ±0.5% FS
Output / Span	100 mV (4 V; ±5 V optional)
Ranges N (Lbf)	2 to 2K (0.4 to 400)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> High stiffness High overload capacity Threaded male / female fitting

Standard



MEAS FN3002

Non-linearity	±0.25% FS
Output / Span	±20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	10K to 2000K (2K to 400K)
Temperature Range.	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> Threaded male fitting Integrated amplifier Optional rod end



MEAS FN1010

Non-linearity	±1% FS
Output / Span	±20 mV (4 V; ±5 V; 4 - 20 mA optional)
Ranges N (Lbf)	10K to 2000K (2K to 400K)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none"> Keyed anti-rotation slot Bidirectional available Optional watertight construction



MEAS FN2420

Non-linearity	±0.25% FS
Output / Span	±20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	20K to 5K (4K to 1K) with 20K to 5000K (4K to 1000K)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> High stiffness Optional load button Optional high level output module

FORCE SENSORS

LOAD CELLS

S-Beam Standard



MEAS FN3030 SERIES

Non-linearity	±0.1% FS
Output / Span	±20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	50 to 100K (10 to 20K)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> • Optional rod ends • Optional high level output • Optional high compensation temperature



MEAS FN3148

Non-linearity	< ±0.05% FS
Output / Span	±20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	10 to 2K (2 to 400)
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> • Very high accuracy • High resolution • Mechanical stops



MEAS FN7110

Non-linearity	±0.1% FS of each range
Output / Span	±20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	10, 100 to 1K, 10K (2, 20 to 200, 2K)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none"> • High resolution • Optional high level output • Double range



FN9620

Non-linearity	±0.05%
Output / Span	±10 to 20 mV
Ranges N (Lbf)	0.5K to 10K
Temperature Range	-40°C to 90°C
Unique Features	<ul style="list-style-type: none"> • High accuracy • IP68 • Entry level

Low Profile and Pan-cake



MEAS FN3000/FN3050

Non-linearity	±0.1% FS
Output / Span	15 to 20 mV (4 V; ±5 V optional)
Ranges N (Lbf)	100N to 1000KN (20 to 200K)
Temperature Range	-40°C to 150 °C
Unique Features	<ul style="list-style-type: none"> • High stability • Optional high level output



MEAS FN3042

Non-linearity	±0.25%F.S.
Output / Span	±1.5mV/V
Ranges N (Lbf)	5 to 500K (1 to 100K)
Temperature Range	-20°C to 80 °C
Unique Features	<ul style="list-style-type: none"> • Skydrol compatible on request • Integrated amplifier optional



MEAS FN7325

Non-linearity	±1% FS
Output / Span	±100 to 150 mV (4 V; ±5 V optional)
Ranges N (Lbf)	5K to 250K (1K to 50K)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none"> • Measures load and torque in 3 directions • Fatigue rated • Minimal cross effects



MEAS FMT

Non-linearity	±1 to 5% FS
Output / Span	15 to 20 mV
Ranges N (Lbf)	20K to 320K (4K to 64K)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> • High stiffness • 1.5X over-range • High temperature

ELECTRONICS/DISPLAYS



MEAS CPA 150 Series

Accuracy	$\pm 0.005\%$ F.S.
Output	Display only
Temperature Range	-10°C to 50°C
Type	Indicator
Unique Features	<ul style="list-style-type: none"> • Suited for strain gauge type sensors • $7\frac{1}{2}$ digits readout • Powered by 2 x AA internal batteries • Low power mode • Front panel Programming • Dual range facility



MEAS ARD154

Accuracy	0.01% F.S.
Output	$\pm 10\text{ V}$ Analogue or 0/4-20 mA current output
Temperature Range	-10°C to 60°C
Type	Amplifier
Unique Features	<ul style="list-style-type: none"> • Suited for 1 to 4 strain gage sensors in parallel • Adjustable sensitivity range 0.1 to 30 mV/V • Calibration pushbutton from 0.1 to 10 mV/V • 20 to 10000 Ω bridge impedance



MEAS M210

Accuracy	0.1% F.S.
Output	$\pm 10\text{ V}$ Analogue integrated
Temperature Range	0°C to 50°C
Type	Display meter
Unique Features	<ul style="list-style-type: none"> • Analog output: $\pm 10\text{V}$ • Red LED display: 2,000 count • High bandwidth • Low noise



MEAS M905

Accuracy	$\pm 0.05\%$ FS
Output	0-10Vdc or current output 4/20mA optional
Temperature Range	-10°C to 60°C
Type	Display meter
Unique Features	<ul style="list-style-type: none"> • Suited for process or strain gauge type sensors • Display: -19999 to 19999 • Compact 96x48x60 mm housing • Front panel Programming • 11 point scaling • Plug-in option boards

POSITION SENSORS

ANGULAR TRANSDUCER—INDUCTIVE

Absolute



MEAS RVIT-15-60 Rotary

Input	4 to 5.5 VDC
Output	±3VDC
Range	±60°
Temperature Range	-25°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Matched & preloaded ABEC 3 bearings • Printed circuit coils • 3/16in shaft diameter

LVDT/RVDT INSTRUMENTATION



AST LVC-4500 Signal Conditioner

Input	9-30 VDC
Output	0-10V DC, 0.5-4.5V DC, ±5V DC or 4-20 mA
Range	55 mVrms to 5.5 Vrms full scale input produces full scale DC output
Temperature Range	-40 to 75°C
Unique Features	<ul style="list-style-type: none"> • Button calibration offers intuitive operation



MEAS LDM-1000 Signal Conditioner

Input	—
Output	±5, 0 to 5VDC, 0 to 10VDC, and 4 to 20mA
Range	—
Temperature Range	-25°C to +85°C
Unique Features	<ul style="list-style-type: none"> • Operates with 4, 5 & 6 wire LVDT and RVDT • Status LEDs • Front mounted Zero, Phase and Span adjustment potentiometers • 100% Zero suppression

LINEAR POTENTIOMETERS



MEAS CLP, MLP

Input	—
Output	Voltage divider
Range	0 - 0.5 to 0 - 10 inches
Temperature Range	-40°C to 90°C
Unique Features	<ul style="list-style-type: none"> • Extended temperature range, miniature design (MLP) • First choice for auto racing applications (CLP) • Perfect for high cycle applications

LINEAR POSITION SENSING

Cable Actuated Sensors



MEAS M150, MTA

Output	Voltage divider
Range	0 - 1.5 to 0 - 5 inches
Temperature Range	-55°C to 100°C
Unique Features	<ul style="list-style-type: none"> • Ultra miniature design (M150) • Designed for extremely tight spaces • High cycle conductive plastic potentiometer



MEAS MT2 Series

Output	Voltage divider, incremental encoder
Range	0-3 to 0 - 50 inches
Temperature Range	-55°C to 125°C
Unique Features	<ul style="list-style-type: none"> • Flight and crash testing • MT2A/MT3A: voltage divider, MT2E: incremental encoder • Compact design, flexible installation perfect for test applications.



MEAS PTX, PT101 Series

Output	Voltage divider, 0 - 5 VDC, 0 -10 VDC, 4-20mA, incremental encoder, velocity
Range	0 - 2 to 0 - 100 inches
Temperature Range	-40°C to 90°C
Unique Features	<ul style="list-style-type: none"> • Original classic design • High precision • Proven track record



MEAS SM, SP Series

Output	Voltage divider, 0 - 10 VDC, 4 - 20 mA
Range	0 - 2.5 to 0 - 50 inches
Temperature Range	-40°C to 70°C
Unique Features	<ul style="list-style-type: none"> • In-Stock • Compact design • Adjustable mounting bracket • Free-release tolerant • M12 connector (some models) • IP67 protection (some models)



MEAS SG, SR Series

Output	Voltage divider, 0-10 VDC, 4-20 mA, incremental encoder
Range	0 - 80 to 0 - 175 inches
Temperature Range	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • In stock • Low cost, high value stringpots • Versatile stainless steel mounting bracket • Single button user-scalable stroke range (SR1M, SR1V)

POSITION SENSORS

LINEAR TRANSDUCERS—INDUCTIVE

Absolute



MEAS DC-EC Series LVDT

Input	±15VDC
Output	±10VDC
Range	±0.05 to ±10 in
Temperature Range	0°C to 70°C
Unique Features	<ul style="list-style-type: none"> • Double magnetic shielding • 200/500 Hz response at -3dB • Shielded cable



MEAS HCT Series LVDT

Input	Loop 12.75 to 28VDC
Output	4 to 20mA
Range	0-0.25 to 0-10 in
Temperature Range	-25°C to 85°C
Unique Features	<ul style="list-style-type: none"> • 4-20mA, 2-wire operation • Welded PT06A hermetic connector • Hermetically sealed



MEAS HR Series LVDT

Input	3Vrms
Output	AC
Range	±0.05 to ±10 in
Temperature Range	-55°C to 150°C
Unique Features	<ul style="list-style-type: none"> • Large 1/16 Inch radial core-to-bore clearance



MEAS MHR Series LVDT

Input	3Vrms
Output	AC
Range	±0.005 to ±2 in
Temperature Range	-55°C to 150°C
Unique Features	<ul style="list-style-type: none"> • Small size • Light weight

TILT SENSORS

Single and Dual Axis



MEAS AccuStar-EA Clinometer

Input Voltage (nomial)	+5 to +30VDC (unregulated)
Output	0.5 to 4.5VDC, or ±3.6VDC
Range	±60°
Temperature Range	-40° to 80°C
Unique Features	<ul style="list-style-type: none"> • Easy to handle • Minimal temperature drift • Good long term stability



MEAS AngleStar Protractor System (APS)

Input Voltage (nomial)	Internal 9V battery
Output	LCD display
Range	±20, ±45, 0 - 90°
Temperature Range	-18° to 55°C
Unique Features	<ul style="list-style-type: none"> • Rugged plastic housing • External power jack • Remote sensing up to 200ft.



MEAS DOG2

Input Voltage (nomial)	—
Output	Voltage / Current / J1939 / CANopen®
Range	±25°, ±45°, ±90°
Temperature Range	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Plug and play • Wide measurement range • Cost-efficient • Cable with connector • Fast MEMS sensor



MEAS DPG Series

Input Voltage (nomial)	—
Output	RS232 / Voltage
Range	±5° to ±30°
Temperature Range	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • CE approved • Rugged housing • Easy to use • User configurable

TRANSDUCERS AND TRANSMITTERS

Miniature



MEAS EPB

Accuracy	±0.5 to ±1% FSO
Output	10 mV to 125 mV
Pressure Range	0 - 0.35 to 350 bar / 0 - 5 to 5K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> • Miniature flush mountable • Flush stainless steel diaphragm, flanged or non-flanged • Bonded silicon gage, high frequency response (To 400 KHz)



MEAS EPB-PW

Accuracy	±0.5 to ±1% FSO
Output	10 mV to 125 mV
Pressure Range	0 - 0.35 to 350 bar / 0 - 5 to 5K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> • Miniature flush mountable • Flush stainless steel diaphragm, flanged or non-flanged • Bonded silicon gage, high frequency response (To 400 KHz) • IP68 ingress protection in Titanium construction



MEAS EPRB-1 / EPRB-2

Accuracy	±0.25% FSO
Output	0.5 to 4.5 VDC
Pressure Range	3.5 - 700 bar / 50 to 10K psi
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none"> • Liquid and gas media compatible with stainless steel • IP66 rating • Miniature design



MEAS EPL

Accuracy	±0.5 to ±1% FSO
Output	10 mV to 125 mV
Pressure Range	0 - 0.35 to 350 bar / 0 - 5 to 5K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> • Miniature flush mountable • Flush stainless steel diaphragm, flanged or non-flanged • Bonded silicon gage, high frequency response (To 400 KHz) • IP68 ingress protection in Titanium construction (EPB-PW)



MEAS EPIH

Accuracy	±1.0% FSO
Output	12 mV to 75 mV
Pressure Range	0 - 0.35 to 20 bar / 0 - 5 to 300 psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none"> • Diffused silicon diaphragm with a large variety of sizes and shapes available as small as 0.05" outside diameter • High frequency response (To 1.7 MHz) • Ultra-miniature design

PRESSURE SENSORS

TRANSDUCERS AND TRANSMITTERS

Miniature



MEAS XP5

Accuracy	Down to $\pm 0.25\%$ FSO
Output	20 - 100 mV
Pressure Range	0 - 1 to 350 bar / 0 - 15 to 5K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none">• Titanium construction• Amplified output options• Cable and connector options• For static and dynamic applications



MEAS XPC10

Accuracy	Down to $\pm 0.25\%$ FSO
Output	12 mV FSO
Pressure Range	0 - 10 to 500 bar / 0 - 150 to 7.5K psi
Temperature Range	-40°C to 220°C
Unique Features	<ul style="list-style-type: none">• Amplified output available• For static and dynamic applications• Optional IP67 ingress protection• High temperature operation



MEAS XPM4

Accuracy	Down to $\pm 0.35\%$ FSO
Output	20 - 100 mV
Pressure Range	0 - 5 to 200 bar / 0 - 75 to 3K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none">• Titanium construction• Cable and connector options• For static and dynamic applications



MEAS XPM10

Accuracy	Down to $\pm 0.25\%$ FSO
Output	20 - 100 mV
Pressure Range	0 - 1 to 350 bar / 0 - 15 to 5K psi
Temperature Range	-40°C to 120°C
Unique Features	<ul style="list-style-type: none">• Stainless steel housing• Amplified output options• Cable and connector options• For static and dynamic applications

Industrial



MEAS U5300

Accuracy	$\pm 0.1\%$ FSO (>5 and ≤ 500 psi)
Output	0.5 - 4.5 V, 1 - 5 V, 0 - 5 V, 0 - 10 V, 4 - 20 mA, 1 - 6 V
Pressure Range	0 - 0.14 to 700 bar / 0 - 2 to 10K psi
Temperature Range	-40°C to 125°C
Unique Features	<ul style="list-style-type: none">• Superior accuracy and total error band• Instrument grade and compact• Variety of pressure ports and electrical configurations• Optional stainless steel snubber

SENSOR ASSEMBLIES



MEAS Miniature Embedment RTD Probe

Applications	<ul style="list-style-type: none"> • Aerospace • Industrial
Package	<ul style="list-style-type: none"> • Tin plated copper alloy or stainless steel
Temperature Range	-50 to 250°C
Unique Features	<ul style="list-style-type: none"> • Single and dual elements • Miniature design • Four case styles • Simple installation • Custom designs available



MEAS Secondary Standard RTD Probe-0.250

Applications	<ul style="list-style-type: none"> • Laboratory • Aerospace / Defense
Package	<ul style="list-style-type: none"> • Stainless steel • 0.250" diameter
Temperature Range	-200 to 420°C
Unique Features	<ul style="list-style-type: none"> • High accuracy calibrations • Single element • 316 stainless steel sheath • Custom designs available



MEAS Tip Sensitive Bearing RTD Probe

Applications	<ul style="list-style-type: none"> • Industrial • Electric motors • Generators
Package	<ul style="list-style-type: none"> • Stainless steel, isolated stainless steel, insulated epoxy glass • Copper tip
Temperature Range	-50 to 250°C
Unique Features	<ul style="list-style-type: none"> • Variety of configurations • Cut-to-length • Fast response • Tip sensitive • Single and dual elements • Custom designs available



MEAS Polyimide Surface RTD Sensors

Applications	<ul style="list-style-type: none"> • Electric Motors • Generators • Aerospace
Package	<ul style="list-style-type: none"> • Platinum, copper, nickel • Style: plotted, wire wound, thin film
Temperature Range	-50 to 200°C
Unique Features	<ul style="list-style-type: none"> • Fast response • Surface sensing • Noninvasive, simple installation • Flat, flexible • Custom dimensions

SCANNERS AND SYSTEMS

PRESSURE AND TEMPERATURE

NetScanner Complete Data Acquisition Devices



MEAS 9116

# of Channels	16
Accuracy	±0.05% FS
Enclosure	IP66 / 30 g vibration
EU Throughput Rate	500 Hz
Measurement Type	Pressure
Media	Dry
Typical Applications	Engine testing, portable data acquisition, wind tunnel research, process monitoring



MEAS 9146-R

# of Channels	16 / 32
Accuracy	±0.25°C
Enclosure	IP66 / 30 g vibration
EU Throughput Rate	33 Hz
Measurement Type	Temperature
Media	RTD / TC / Volt
Typical Applications	Engine testing, portable data acquisition, wind tunnel research, process monitoring



MEAS 9146-T

# of Channels	16
Accuracy	±0.25°C
Enclosure	IP54 / 30 g vibration
EU Throughput Rate	33 Hz
Measurement Type	Temperature
Media	TC
Typical Applications	Engine testing, portable data acquisition, wind tunnel research, process monitoring



MEAS 9022

# of Channels	12
Accuracy	±0.05% FS
Enclosure	IP64 / 30 g vibration
EU Throughput Rate	100 Hz
Measurement Type	Pressure
Media	Liquid
Typical Applications	Engine testing, third party transducers, close coupled requirements, high pressure

PRESSURE

NetScanner Complete Data Acquisition Devices



MEAS 9032

# of Channels	1
Accuracy	±0.01% FS
Enclosure	Laboratory grade
EU Throughput Rate	10 Hz
Measurement Type	Barometer
Media	Dry
Typical Applications	Barometric monitor, precision reference



MEAS 9034, 9038

# of Channels	1
Accuracy	±0.01% FS
Enclosure	Laboratory grade
EU Throughput Rate	10 Hz
Measurement Type	Calibrator
Media	Dry
Typical Applications	Calibration, transfer standard, verification testing



MEAS 98RK-1, 9816

# of Channels	128
Accuracy	±0.05% FS
Enclosure	19" rackmount / 4U
EU Throughput Rate	100 Hz
Measurement Type	Pressure
Media	Dry
Typical Applications	Turbine engine test, control room location



MEAS Flight Data System

# of Channels	512
Accuracy	±0.05%
Enclosure	Flight grade
EU Throughput Rate	10 / 100 Base-T
Measurement Type	Pressure
Media	Dry
Typical Applications	Flight testing

SCANNERS AND SYSTEMS

PRESSURE SCANNERS

Miniature High Density Pressure Scanners



MEAS 64HD DTC

# of Channels	64
Accuracy	±0.03% FS
Media	Dry
Port Sizes (Inches)	0.040
Thermal Comp.	Active (DTC)
Type	Pressure
Typical Applications	Wind tunnel research, flight test, on vehicle research



MEAS 32HD DTC

# of Channels	32
Accuracy	±0.03% FS
Media	Dry
Port Sizes (Inches)	0.040 or 0.063
Thermal Comp.	Active (DTC)
Type	Pressure
Typical Applications	Wind tunnel research, flight test, on vehicle research



MEAS 64HD, 32HD, 16HD

# of Channels	64, 32 or 16
Accuracy	±0.05% FS
Media	Dry
Port Sizes (Inches)	0.040 or 0.63
Thermal Comp.	Passive
Type	Pressure
Typical Applications	Wind tunnel research, flight test, on vehicle research



MEAS MicroScanner

# of Channels	16
Accuracy	±0.05%
Media	Dry
Port Sizes (Inches)	Direct mount
Thermal Comp.	Active
Type	Pressure
Typical Applications	For confined space, wind tunnel, flight test

DATA ACQUISITION SYSTEMS

Multi-Scanner Data Acquisition Systems



MEAS Optimus

# of Channels	2048
Accuracy	±0.03% FS
Enclosure	Laboratory grade
EU Throughput Rate	2000 Hz
Media	Dry
Type	Pressure scanning
Typical Applications	Aerospace development



MEAS Initium

# of Channels	512
Accuracy	±0.05% FS
Enclosure	Laboratory grade
EU Throughput Rate	1200 Hz
Media	Dry
Type	Pressure scanning
Typical Applications	Wind engineering



MEAS Interface

# of Channels	512
Accuracy	±0.05% FS
Enclosure	Miniature
EU Throughput Rate	2000 Hz
Media	Dry
Type	A/D conversion
Typical Applications	In-model placement, Optimus System interface

MEAS Pneumatics

# of Channels	19, 31, 36, 55
Accuracy	—
Enclosure	Miniature
EU Throughput Rate	—
Media	Dry
Type	Quick disconnect
Typical Applications	Pressure connections for confined spaces

TORQUE SENSORS

TORQUE METERS

Reaction and Rotary



CD1140

Non-linearity	$\pm 0.1\%$ FS
Output / Span	± 10 V (Pulses / Rev. 6.0 / 360)
Ranges Nm(Lbf-ft)	± 0.05 to $\pm 20,000$ Nm (± 0.04 to $\pm 16,000$ lbf-ft)
Temperature Range	0°C to 60°C
Unique Features	<ul style="list-style-type: none">• High accuracy• Built-in amplifier• Speed and angle detection



CS1120

Non-linearity	$< \pm 0.25\%$ FS
Output / Span	± 20 mV (4 V; ± 5 V optional)
Ranges Nm(Lbf-ft)	± 5 to $\pm 2.5\text{K}$ (± 4 to $\pm 2\text{K}$)
Temperature Range	-20°C to 100°C
Unique Features	<ul style="list-style-type: none">• Optional high level output• Excellent temperature stability



CS1210

Non-linearity	$< \pm 0.25\%$ FS
Output / Span	± 20 mV (4 V; ± 5 V optional)
Ranges Nm(Lbf-ft)	± 160 to $\pm 10\text{K}$ (± 128 to $\pm 8\text{K}$)
Temperature Range	-40°C to 150°C
Unique Features	<ul style="list-style-type: none">• High stiffness• Optional high level output



CD1050

Non-linearity	$< \pm 0.25\%$ FS
Output / Span	± 20 mV (4 V; ± 5 V optional)
Ranges Nm(Lbf-ft)	± 5 to $\pm 7\text{K}$ (± 4 to $\pm 5.6\text{K}$)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none">• Optional high level output• Rugged



CD1095

Non-linearity	$< \pm 0.25\%$ FS
Output / Span	± 20 mV (4 V; ± 5 V optional)
Ranges Nm(Lbf-ft)	± 5 to $\pm 2,500$ Nm (± 4 to 2,000 lbf-ft)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none">• High accuracy• Built-in amplifier

AUTOMOTIVE DESIGN AND TEST SENSOR



FCA7300

Non-linearity	$\pm 0.1\%$ FS
Output / Span	± 10 V
Ranges Nm(Lbf-ft)	10 to 200 Nm (7 lbf-ft to 150 lbf-ft)
Temperature Range	-20°C to 80°C
Unique Features	<ul style="list-style-type: none">• Dual torque / angle range• Steering velocity measurement• Fits all road vehicles

PIEZOELECTRIC TRAFFIC SENSOR



RoadTrax Brass Linguini (BL)

Temperature Range	- 40 to 160°F (-40 to 70°C)
Type	Piezoelectric axle sensor
Typical Output Level	A wheel load of 400 pounds will produce a minimum output signal of 250 mV, at 70°F and 55 mph for a proper installation
Unique Features	<ul style="list-style-type: none">• Two sizes of installation brackets are included with the sensors, 3/4" (small) brackets and 1" (large) brackets. There is one small and one large bracket per 6" (150mm) of sensor length.• Piezoelectric Material: Spiral-wrapped PVDF Piezoelectric film with a nominal Piezoelectric Coefficient of 34 pC/N.

VIBRATION SENSORS

ACCELEROMETERS

Plug and Play, Amplified



MEAS 4610

Full Scale Ranges	200, 100, 50, 30, 10, 5, 2
Sensitivity	10 - 1000 mV/g
Temperature Range	-54°C to 125°C
Unique Features	<ul style="list-style-type: none"> • UltraStable technology • Temperature compensated • High resolution • Built-in amplifier



MEAS 4801A

Full Scale Ranges	±2, 5, 10, 30, 50, 100, 200
Sensitivity	10 - 1000 mV/g
Temperature Range	-55°C to 125°C
Unique Features	<ul style="list-style-type: none"> • Built-in amplifier • Hermetically sealed • Stainless steel housing



MEAS 58

Full Scale Ranges	±50, 100, 200, 500, 2000
Sensitivity	0.12 - 3.0 mV/g
Temperature Range	-20°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Low noise cable • Small package • Light weight



MEAS 64B/64C

Full Scale Ranges	±50, 100, 200, 500, 2000, 6000
Sensitivity	0.10 - 3.0 mV/g
Temperature Range	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • SAE J211 / 2570 compliant • Flexible, rugged cable • Over-range stops



MEAS 3700

Full Scale Ranges	±50, 200, 500, 2000, 6000
Sensitivity	0.08 - 2.0 mV/g
Temperature Range	-54°C to 121°C
Unique Features	<ul style="list-style-type: none"> • No zero shift • mV output • 20,000 g over-range protection



MEAS EGCS-D5

Full Scale Ranges	±50, 100, 250, 500, 1000, 2500, 5000, 10000
Sensitivity	.02 - 4.0 mV/g
Temperature Range	-40°C to 100°C
Unique Features	<ul style="list-style-type: none"> • Rugged design, miniature • Critically damped • In-line amplifier option

Triaxial



MEAS 53A

Full Scale Ranges	±50, 200, 500, 2000
Sensitivity	0.15 - 3.0 mV/g
Temperature Range	-20°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Low cost • Gas damping • Low power • Triaxial



MEAS 4630

Full Scale Ranges	±2, 5, 10, 30, 50, 100, 200
Sensitivity	10 - 1000 mV/g
Temperature Range	-40°C to 115°C
Unique Features	<ul style="list-style-type: none"> • Temperature compensated • High over-range • Hermetically sealed



4332M3

Full Scale Ranges	±20, 10, 5, 2
Sensitivity	0.4 - 4.0 mA/g
Temperature Range	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Corrosion resistant • Three independent circuits • DC response

VOLTAGE MODE, PIEZOELECTRIC (IEPE) ACCELEROMETERS

Plug and Play



MEAS 7102A

Full Scale Ranges	±50, 100, 500, 2000
Sensitivity	2.5 - 100 mV/g
Temperature Range	-55°C to 125°C
Unique Features	<ul style="list-style-type: none"> • Glue mount • 0.8 gm



MEAS 7104A/7105A

Full Scale Ranges	±50, 100, 500, 1000
Sensitivity	5 - 100 mV/g
Temperature Range	-55°C to 125°C
Unique Features	<ul style="list-style-type: none"> • Single axis, shear mode • Wide bandwidth • Top and side connector option



MEAS 7131A

Full Scale Ranges	±50, 100, 500, 2000
Sensitivity	2.5 - 100 mV/g
Temperature Range	-55°C to 125°C
Unique Features	<ul style="list-style-type: none"> • Triaxial • 6.0 gm

VIBRATION SENSORS

RATE AND INERTIAL

Angular Rate/Gyro



MEAS 620



MEAS 633



MEAS 634



MEAS GY407D



MEAS 11206AC



MEAS 31206B

Accuracy	±0.5% non-linearity	±0.5% non-linearity	±0.5% non-linearity	±0.1% non-linearity	±0.1% non-linearity	±0.1% non-linearity
Full Scale Ranges (°/s)	±500, 1500, 6000, 12K, 18K, 24K, 50K	±100, 500, 1500, 6000, 12K, 18K, 24K	±100, 500, 1500, 6000, 12K, 18K, 24K	±30, 1000	±50, 180, 300, 600	±50, 150, 300, 600, 1000, 1200
Temperature Range	-40°C to 105°C	-40 to 105°C	-40°C to 105°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Unique Features	<ul style="list-style-type: none"> • Small, lightweight package • Insensitive to shock • SAEJ211 compliant 	<ul style="list-style-type: none"> • Miniature compact package • Rugged shock resistant housing 	<ul style="list-style-type: none"> • 6DoF analog sensor • Rugged, compact housing • Signal conditioned 	<ul style="list-style-type: none"> • Digital output • Built-in analyses • Dynamic interface • Performance over temperature 	<ul style="list-style-type: none"> • Identical interchangeable sensor • Best performance over temperature • Gain and offset compensation 	<ul style="list-style-type: none"> • Performance over temperature • Power supply regulation • Temperature calibration data

ELECTRONICS

Signal Conditioners



MEAS 121



MEAS 130/130M1



MEAS 160

# of Channels	3	1	1
Gain Range	0.001 to 9999	0.1, 1, 10	0.001 to 999.9
Type	Bench top	In-line charge converter	Bench top
Unique Features	<ul style="list-style-type: none"> • Universal DC amplifier • Low noise operation with auto-zero • For bridge type sensors • μP controlled, programmable • Low pass filter options 	<ul style="list-style-type: none"> • Low noise • Small package • Wide bandwidth • BNC male or female • Coaxial 10-32 option 	<ul style="list-style-type: none"> • Charge and IEPE conditioner • Sensitivity normalization • LCD display • Support IEEE 1451.4 TEDS • 10 V peak linear output • Selectable LP filter



MEAS 140A



MEAS 142A Series



MEAS 161

# of Channels	1	1	4
Gain Range	10, 25, 50, 100, 200	10, 50, 100, 200, 500	0.001 to 999.9
Type	In-line amplifier	In-line amplifier	Bench top
Unique Features	<ul style="list-style-type: none"> • User selectable Gain settings • Small rugged package • Includes auto-zero function 	<ul style="list-style-type: none"> • Low noise inline strain gage amplifier • User selectable gain settings • Auto-zero function • Small Rugged Package 	<ul style="list-style-type: none"> • Charge and IEPE conditioner • Sensitivity normalization • Support IEEE 1451.4 TEDS • 10 V peak linear output • Selectable LP filter

WATER LEVEL SENSORS

ANALOG LEVEL SENSORS— 1" BORE 0.75" BORE



KPSI 700, 710, 720

Accuracy	±0.25%, ±0.50%, ±1.00% FSO
Output	4 - 20 mA, 0 - 5 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 0 - 10 VDC, 1.5 - 7.5 VDC
Range	Custom ranges from: 2.3 - 700 ft H ₂ O (Vented) 10 - 700 ft H ₂ O (Sealed) 35 - 700 ft H ₂ O (Absolute)
Temperature Range	-20°C to 60°C
Typical Applications	Groundwater monitoring, surface water monitoring, oceanographic research, pump control, life stations, landfill leachate



KPSI 320, 330, 335

Accuracy	±0.10%, ±0.05% FSO (KPSI 330, 335) ±0.25% FSO (KPSI 320)
Output	4 - 20 mA, 0 - 5 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 0 - 10 VDC, 1.5 - 7.5 VDC (KPSI 320, 330, 335)
Range	Custom ranges from: 5 - 700 ft H ₂ O (Vented: KPSI 320, 330, 335) 0 - 5 ft H ₂ O to 0-700 ft H ₂ O (Sealed: KPSI 330) 10 - 700 ft H ₂ O (Sealed: KPSI 320) 35 - 700 ft H ₂ O (Absolute: KPSI 320, 330)
Temperature Range	-20°C to 60°C (KPSI 320, 330, 335)
Typical Applications	Groundwater monitoring, surface water monitoring, oceanographic research, pump control, lift stations, landfill leachate, tailrace and forebay monitoring

KPSI 300DS

Accuracy	±0.50% FSO
Output	4 - 20 mA, 0 - 5 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 0 - 10 VDC, 1.5 - 7.5 VDC
Range	Custom ranges from: 700 - 4614 ft H ₂ O
Temperature Range	-20°C to 60°C
Typical Applications	Down hole, level control, pump control

FLEXIBLE DIAPHRAGM LEVEL SENSORS



KPSI 705

Accuracy	±0.25% FSO
Output	4 - 20 mA, 0 - 5 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 0 - 10 VDC, 1.5 - 7.5 VDC
Range	Custom ranges from 6 - 115 ft H ₂ O
Temperature Range	-20°C to 60°C
Typical Apps	Wastewater, lift stations, pump control, slurry tank liquid level, tank level



KPSI 745, 750

Accuracy	±0.25% FSO
Output	4 - 20 mA, 0 - 5 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 0 - 10 VDC, 1.5 - 7.5 VDC
Range	Custom ranges from 10 - 115 H ₂ O
Temperature Range	-20°C to 60°C
Typical Apps	Wastewater, lift stations, pump control, slurry tank liquid level, tank level

DIGITAL LEVEL SENSORS



KPSI 353, 355

Accuracy	±0.10% FS TEB (KPSI 353) ±0.05% FS TEB (KPSI 355)
Output	SDI-12
Range	10 - 230 ft H ₂ O
Temperature Range	-20°C to 60°C
Typical Apps	Groundwater monitoring, surface water monitoring, oceanographic research



KPSI 501

Accuracy	±0.01 ft H ₂ O
Output	SDI-12
Range	10 - 50 ft H ₂ O
Temperature Range	-20°C to 60°C
Typical Apps	Groundwater monitoring, surface water monitoring, oceanographic research

WATER LEVEL SENSORS

DATA LOGGERS



TruBlue 285 CT

Accuracy	1% of reading or 20 $\mu\text{S}/\text{cm}$
Output	RS-485 (Half Duplex) / SDI-12
Range	5 - 200,000 $\mu\text{S}/\text{cm}$
Temperature Range	0°C to 50°C
Typical Apps	Aquifer characterization and pump tests, saltwater intrusion studies, flood and storm surge, tide gauging, oceanographic research, surface water monitoring, groundwater monitoring



TruBlue 288 CT

Accuracy	1% of reading or 20 $\mu\text{S}/\text{cm}$
Output	RS-485 / SDI-12
Range	5 - 200,000 $\mu\text{S}/\text{cm}$
Temperature Range	0°C to 50°C
Typical Apps	Aquifer characterization and pump tests, saltwater intrusion studies, flood and storm surge, tide gauging, oceanographic research, surface water monitoring, groundwater monitoring



TruBlue 555, 575 Baro, 585 CTD

Accuracy	$\pm 0.05\%$ FS TEB (TruBlue 555, 575, 585) 1% of reading or 20 $\mu\text{S}/\text{cm}$ (TruBlue 585)
Output	RS-485 / SDI-12
Range	0 - 5 ft H ₂ O to 0 - 700 ft H ₂ O (TruBlue 555, 585) 8 - 16 psia (TruBlue 575), 5 - 200,000 $\mu\text{S}/\text{cm}$ (TruBlue 585)
Temperature Range	0°C to 50°C
Typical Apps	Groundwater monitoring, surface water monitoring, oceanographic research, barometric pressure monitoring



TruBlue 255 Level

Accuracy	0.05% FS TEB
Output	RS 485
Range	0-658 ft H ₂ O
Temperature Range	-20°C to 80°C
Typical Apps	Flood and storm monitoring, wave studies and rapid sampling, stream and stage gauging, slug and pump test, aquifer characterization

OEM LEVEL SENSORS



LTA, LT Series

Accuracy	$\pm 0.25\%$ FSO
Output	4 - 20 mA
Range	0 - 1 psi up to 0 - 300 psi (Custom ranges available)
Temperature Range	-20°C to 60°C
Typical Apps	Pump control, tank liquid level, landfill leachate monitoring, construction bypass pumping, dewatering, lift station monitoring, submersible tank liquid level, liquid line pressure, slurry tank liquid level, wastewater



LTB, LTR Series

Accuracy	$\pm 0.25\%$ FSO
Output	4 - 20 mA, 0 - 5 VDC, 0 - 10 VDC, 0 - 2.5 VDC, 0 - 4 VDC, 1.5 - 7.5 VDC
Range	0 - 11.5, 23.1, 34.6, 69.2, 115.4 ft H ₂ O (Custom ranges available)
Temperature Range	-20°C to 60°C
Typical Apps	Pump control, tank liquid level, landfill leachate monitoring, construction bypass pumping, dewatering, lift station monitoring, submersible tank liquid level, liquid line pressure, slurry tank liquid level, wastewater

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SS-TS-TM700 06/2017

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