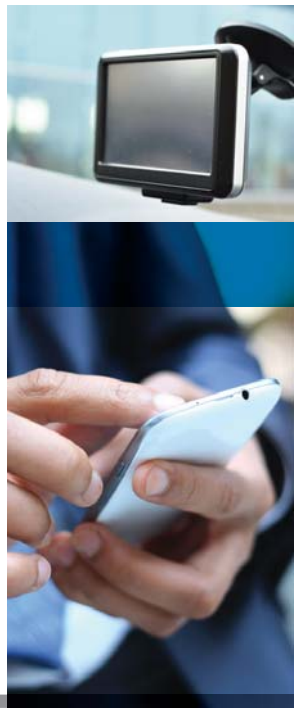
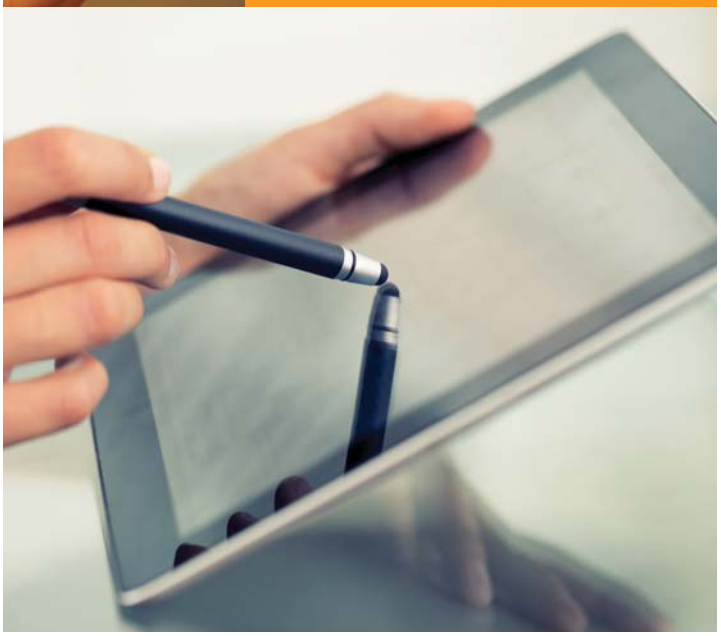


TE SENSOR SOLUTIONS FOR CONSUMER

TE SENSOR SOLUTIONS FOR CONSUMER

TE Connectivity (TE) is one of the largest connectivity and sensor companies in the world, with the acquisition of Measurement Specialties. Our broad portfolio of sensor technologies is designed for a wide range of applications and serves a number of industries, including consumer. We collaborate with engineers to help transform their concepts into creations—redefining what's possible using intelligent, efficient and high-performing TE products and solutions proven in harsh environments.

INNOVATIVE SENSOR SOLUTIONS



SENSOR TYPES

- PRESSURE
- HUMIDITY
- TEMPERATURE
- FORCE
- PIEZO FILM
- POSITION
- PHOTO OPTIC
- SENSOR HUB

APPLICATION SOLUTIONS

Sensor evolution is driving innovation in consumer applications. This rapid adoption of technology spans many markets including fitness and exercise, wearable technology, sports and sports training productivity. TE Sensor Solutions, with its decades of engineering expertise, extensive manufacturing capabilities, and global footprint is supporting this trend by offering OEMs a variety of sensors that have a minimal physical footprint, low power requirements, and attractive high volume pricing.

Mobile (Smart) Phones

- Barometric pressure sensor to measure altitude and in-building telemetry for emergency call
- Humidity sensor for personal environment adaption/ home comfort control system

Multi-Function Watches

- Barometric pressure sensor to measure altitude and in-building telemetry
- Photo optic (SpO_2) sensor for heart-rate monitoring
- Waterproof altimeter to measure floors climbed and calorie estimation

Fitness Equipment

- Force sensor for pedal force and energy measurement

Weather Stations

- Miniature digital pressure sensor for barometric pressure and trend
- Miniature digital humidity sensor for atmospheric humidity and trend
- Reed switch or MR sensor for wind-speed measurement
- Temperature sensor for temperature monitoring

GPS Devices

- Barometric pressure sensor for altitude and navigation dead-reckoning

Hobby Drones
Unmanned Aerial Vehicles (UAV)

- Barometric pressure sensor to regulate/report altitude and ensure vertical stability
- MR sensors for the camera 3-D stabilization platforms
- NTC temperature sensors to monitor charging for high capacity LiPo batteries

Room Comfort

- Humidity sensor for personal environment adaption/ home comfort control system

Hair Care

- Temperature sensors to monitor heating elements in hair dryers and curling irons

Sleep Monitors

- Piezo film detects body movement and vital signs to determine sleep phase and quality

Smart Writing Tools

- Piezo film ultrasonic components in smartphone and whiteboard digitizers for graphics and handwriting capture

Cycle Computers

- Barometric pressure sensor for altitude profile and energy consumption

Smart Scales

- Force sensor for body weight
- Barometric compensation for air quality sensor

Dive Computers

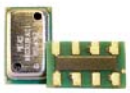
- Water pressure sensor to measure dive depth

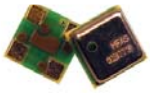
Smart Sensor Hub

- TE Connectivity offers a variety of smart sensor hub development tools optimized to aid engineers with integrating sensors into their product designs
- Compatible with Pmod, AVNET ZEDboard/MicroZED, Atmel Xplain Pro, and Linux based development systems

Pressure Sensors

Board Mounted, Digital Output Altimeter Modules





	MS5607, MS5611	MS5637	MS5805	MS5837
Unique Features	• 24-bit digital sensor • Software calibration and temperature compensation (I^2C and SPI) • Pressure and temperature measurement • No external components required	• 24-bit digital sensor • High-resolution module, 13cm • Supply voltage: 1.5 to 3.6V • Low power, 0.6 µA (standby ≤ 0.1 µA at 25°C)	• 24-bit digital sensor • High resolution module, 20cm • Supply voltage: 1.8 to 3.6V • Low power, 0.6 µA (standby ≤ 0.1 µA at 25°C) • Sealing designed for 2.5 x 1 mm O-ring • Silicone gel protection • Water-resistant	• 24-bit digital sensor • High resolution module 0.2 mbar • Supply voltage: 1.5 to 3.6V • Low power, 0.6 µA (standby < 0.1 µA at 25°C) • Hermetically sealable for outdoor devices • Transparent and white gel • Water-resistant
Linearity/ Absolute Accuracy	±1.5 mbar / ±0.02 psi at 25°C	±2.0 mbar / ±0.03 psi at 25°C	±2.0 mbar / ±0.03 psi at 25°C	±1.5 mbar / ±0.02 psi at 25°C
Output/Span	Digital 24-bit SPI and I^2C	Digital 24-bit I^2C	Digital 24-bit I^2C	Digital 24-bit I^2C
Resolution	0.024 mbar / 0.00035 psi (MS5607) 0.012 mbar / 0.00017 psi (MS5611)	0.016 mbar / 0.00023 psi	0.02 mbar / 0.00029 psi	0.2 mbar / 0.0029 psi
Type	Absolute	Absolute	Absolute	Absolute
Pressure Range	10 - 1.2K mbar / 0.15 - 17 psi	10 - 2K mbar / 0.15 - 29 psi	10 - 2K mbar / 0.15 - 29 psi	0 – 30 bar / 0 – 435 psi
Overpressure	10 bar / 145 psi	6 bar / 87 psi	5 bar / 73 psi	50 bar / 725 psi
Operating Temp.	-40 to 85°C	-40 to 85°C	-40 to 85°C	-20 to 85°C
Dimensions (mm)	5 x 3 x 1	3 x 3 x 0.9	4.5 x 4.5 x 3.5	3.3 x 3.3 x 2.5
Typical Apps	Smart phones, barometric compensation, air density compensation, UAV	Smart phones, tablet PCs, personal navigation devices	Mobile altimeter/barometer systems, bike computers, adventure or multi-mode watches, variometers, dataloggers, wearables	Mobile water depth measurement systems, diving computers, adventure or multi-mode watches, dataloggers

Board Mounted, Digital Output Modules

	MS58xx	MS4515DO, MS4525DO
Unique Features	• 24-bit digital sensor, software calibration and temperature compensation (I2C & SPI), no external components • Supply voltage 1.8 to 3.6V	• 14-bit digital sensor (MS4515 / 25DO) • Pressure and temperature measurement • Single supply of 3.3 or 5.0Vdc (MS4515 / 25DO) • Top, side barbed or manifold O-ring port • J lead or thru hole pins
Options	High endurance (Option HM)	Gel coat, low power (MS4515 / 25DO)
Linearity/Absolute Accuracy	±1.5 mbar / ±0.02 psi at 25°C (MS5803-01BA) ±250 mbar / ±4 psi at 0°C to 40°C (MS5803-30BA)	0.25% / 1% TEB
Output/Span	Digital 24-bit I^2C and SPI (Mode 0, 3)	14-bit digital word SPI or I^2C protocol (MS4515 / 25DO)
Resolution	0.012 mbar / 0.00017 psi (MS5803-01BA) 0.5 mbar / 0.0073 psi (MS5803-30BA)	—
Type	Absolute	Gage, differential (MS4515DO) Gage, absolute, differential, compound (MS4525DO)
Pressure Range	1, 2, 5, 14, 30 bar / 15, 29, 73, 203, 435 psi	0 - 2, 4, 5, 10, 20, 30" H2O (MS4515DO) 0 - 0.07, 0.35, 1, 2, 3, 10 bar / 0 - 1, 5, 15, 30, 50, 150 psi (MS4525DO)
Overpressure	10 bar / 145 psi (for 1 & 2 bar modules) 30 bar / 435 psi (for 5 & 14 bar modules) 50 bar / 725 psi (for 30 bar modules)	0.69 bar / 10 psi (MS4515DO) 3X range (MS4525DO)
Operating Temp	-40°C to 85°C	-25°C to 125°C
Dimensions (mm)	6.4 x 6.2 x 2.9	12.5 x 9.9
Typical Apps	Precision altimeter, diving and multi-mode watches, in-building navigation, variometers / flight instruments	Air flow measurements, variometers, UAV

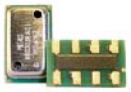
Pressure Sensors
Board Mounted, Digital Output Modules

	MS5525DSO	MS5540, MS5541
Unique Features	• 24-bit digital small outline sensor • Pressure and temperature measurement • Single supply of 1.8 or 3.6Vdc • Top straight/barb, flat top, o-ring seal	• 16-bit digital sensor, very low noise (±0.1 mbar / 0 psi), software calibration and temperature compensation, pressure and temperature measurement (35 ms/meas.) • Low power, low voltage (2.2 to 3.6 V / <4 / 0.1 µA) • No external components required, small SMD ceramic carrier • Gel provides water protection
Linearity/Absolute Accuracy	0.25% / 2.5% TEB	±1.5 mbar / ±0.02 psi at 25°C; 750 to 1100 mbar / 11 to 16 psi (MS5540) -25 to 20 mbar / -0.3 to 0.3 psi at 0°C to 40°C; 0 to 5 bar / 0 to 72 psi (MS5541)
Output/Span	24-bit digital word SPI or I²C protocol	Digital 16-bit data word, 3-wire SPI-like serial interface
Resolution	—	0.1 mbar / 0.0015 psi (MS5540) 1.2 mbar / 0.017 psi (MS5541)
Type	Gage, absolute, differential, compound	Absolute
Pressure Range	0 - 0.07, 0.14, 0.35, 1, 2, 3, 10 bar 0 - 1, 2, 5, 15, 30, 50, 150 psi	10 to 1100 mbar / 0.145 to 16 psi (MS5540) 0 to 14 bar / 0 to 203 psi (MS5541)
Overpressure	3X range	10 bar / 145 psi (for 1 bar modules) 30 bar / 435 psi (for 14 bar modules)
Operating Temp	-40°C to 125°C	-40°C to 85°C
Dimensions (mm)	11.4 x 7.4	6.4 x 6.2 x 2.9
Typical Apps	Variometers, UAV	Mobile altimeter, barometer systems, weather monitoring systems, adventure or multi-mode watches, GPS receivers, diving computers and divers' watches

Pressure Sensors
Board Mounted, mV Output

	MS4425, MS4426
Package	6 pin DIL
Type	Gage, absolute, differential
Pressure Range	0 - 0.07, 0.35, 1, 2, 3, 7, 10, 21 bar / 0 - 1, 5, 15, 30, 50, 100, 150, 300 psi
Output/Span	60 mV, 90 mV, and 100 mV typical
Unique Features	• Temperature compensated • High performance UltraStableTM die • Voltage excitation
Accuracy	±0.1% Non-linearity
Operating Temp	-25°C to 85°C
Dimensions (mm)	15.2 x 13.7
Typical Apps	Variometers, UAV

Combination Sensors
Pressure, Temperature, and Humidity



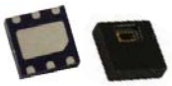
	MS8607
Unique Features	• Integrated pressure, humidity and temperature sensor • High-resolution pressure, 13 cm
Linearity/Absolute Accuracy	Pressure: ±2 mbar / ±0.03 psi at 25°C (Typ.) Humidity: ±3%RH at 25°C (Typ.) Temperature: ±1°C at 25°C (Typ.)
Output/Span	Digital 24-bit I²C
Resolution	Pressure: 0.016 mbar / 0.00023 psi (Typ.) Humidity: 0.04%RH (Typ.) Temperature: 0.01°C (Typ.)
Pressure Type	Absolute
Pressure Range	10 - 2K mbar / 0.15 - 29 psi
Overpressure	6 bar / 87 psi
Humidity Range	0 to 100% RH
Operating Temp	-40°C to 85°C
Dimensions (mm)	5 x 3 x 1
Typical Apps	Weather station, smart phones, tablet PCs, room comfort, home comfort, multi-function watches, UAV safe operating enviroment, shipping container badges (track conditions during shipment), smart thermostats

Humidity Sensors

Capacitive

HS1101LF

Package	Through hole TO39 with side opening plastic cap
Type	Analog output
Operating RH Range	0 to 100% RH
Operating Temp	-60°C to 140°C
Unique Features	• Very robust and recognized component capable of withstanding most of the applications in the humidity world in very cost effective ways
Accuracy	180 pF ±3 pF at 55% RH
Dimensions (mm)	10 x 10 x 19
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches



HTU2X(F) Series

Package	DFN type
Type	Digital RH and temperature
Operating RH Range	0 to 100% RH
Operating Temp	-40°C to 125°C
Unique Features	• Low power consumption • Fast response time • Very low temperature coefficient • I^2C interface or PWM interface or SDM interface • Optimal filter (F)
Accuracy	±3% RH at 25°C (10 to 95% RH) ±0.3°C at 25°C
Dimensions (mm)	3.0 x 3.0 x 1.0
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches

HTF3000LF

Package	PCB for Board to Board
Type	Frequency output for RH (Digital), direct NTC for temperature
Operating RH Range	0 to 100% RH
Operating Temp	-40°C to 85°C
Unique Features	• Voltage supply from 3 to 8 Vdc • Through hole or SMD • T&R available
Accuracy	±3% RH at 55% RH ±0.25°C at 25°C
Dimensions (mm)	12.5 x 18.5 x 11.2
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches

HTU3535PVBM/Wire

Package	Cost effective small size mini-module
Type	Analog voltage RH and NTC temperature
Operating RH Range	0 to 100% RH
Operating Temp	-40°C to 110°C
Unique Features	• PTFE filter (optional) • Electronics fully protected (5 Volt) • Multiple connector choices (JST, samtec board to board through hole) • Based on HTU21
Accuracy	±3% RH at 55% RH ±0.25°C at 25°C
Dimensions (mm)	27 x 11.9 x YY (depending on the connector, from 6 to 10.8 mm length)
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches

HTU383X/Wire

Package	Cost effective small size mini-module
Type	Digital RH and temperature
Operating RH Range	0 to 100% RH
Operating Temp	-40°C to 110°C
Unique Features	• PTFE filter (optional) • Electronics fully protected (5 Volt) • Multiple connector choices (JST, samtec board to board through hole) • Based on HTU21
Accuracy	±3% RH at 55% RH ±0.25°C at 25°C
Dimensions (mm)	27 x 11.9 x YY (depending on the connector, from 6 to 10.8 mm length)
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches

HTG351xCH

Package	Cost effective small size mini-module
Type	Analog voltage RH and NTC temperature
Operating RH Range	0 to 100% RH
Operating Temp	-40°C to 110°C
Unique Features	• Electronics fully protected with potting material (3.3 Volt or 5 Volt) • Multiple connector choices (JST, samtec board to board through hole)
Accuracy	±3% RH at 55% RH ±0.25°C at 25°C
Dimensions (mm)	27 x 11.9 x 6.7
Typical Apps	Weather station, room comfort, home comfort, smart phones, multi-function watches

Temperature Sensors

Sensing Elements - NTC, RTD, Digital Output

	Thermistor Chips	TSYS Series	Nickel RTD
Package	Leadless Chips SMD 0402, 0603, 0805	QFN16, TDFN8	• SOT 23 • Bare die on request
Type	• NTC • Analog output • Gold or silver electrodes • Surface mounted	• Digital output • I²C, SPI, PWM, SDM (convertible to analog voltage)	• Analog output • Thin film nickel structure on silicon substrate, protected with a passivation layer • SOT23 package for SMT • Bare die for COB assembly
Resistance Range	Chip:100 to 1MΩ / SMD:40 to 500kΩ	—	1000Ω
Unique Features	• Wire bonding compatible • End band SMD	• Low power • Small size • Calibrated and ready to use • 16 bit resolution	• Harsh environment compatible • Automotive qualified • Very small dimensions • Very short response time • Good linearity • High temperature coefficient • Low power consumption • Good thermal connection of sensing element through lead frame-pin
Accuracy	±1% to 10%	Up to ±0.1°C at -5°C to 50°C	Class B, according to former DIN 43760 standard
Operating Temp.	-40°C to 125°C	-40°C to 125°C	-55 °C to 160 °C
Dimensions (mm)	Chip: 0.6mm - 1.0 mm square SMD 0402: 1 x 0.5 x 0.7 SMD 0603: 1.6 x 0.8 x 1 SMD 0805: 2 x 1.25 x 1.2	QFN16: 4 x 4 x 0.85 TDFN8: 2.5 x 2.5 x 0.75	2.1 x 2.5 x 2.1 (SOT23) 0.7 x 0.7 x 0.4 (bare die)
Typical Apps	Infrared sensing systems, PCB mounting temperature measurement, smart thermostats	Replacement of precision RTDs, thermistors and NTCs, high-precision thermostats	OEM, thermal compensation, thermal management, smart phones, thermopile precision reference

	Platinum Thin Film Chips	Platinum Thin Film Sensors	Radial Leaded Thermistors
Package	RTD, Leadless chips	RTD, Wired component	Radial, beads
Type	• Analog output • Thin film platinum deposited on ceramic substrate • Contact pads on top and bottom side for NTC chip like assembly • Contact pads on both ends for SMT	• Analog output • Thin film platinum deposited on ceramic substrate, glass coated • Tube outline available • Connection via radial leads	• Epoxy or glass coated
Resistance Range	100Ω, 1000Ω (Other values on request)	100Ω, 1000Ω (Other values on request)	100 to 1MΩ
Unique Features	• Long term stability • Interchangeability • Assembly like NTC chips • Very small dimensions • Short response time	• Long term stability • Interchangeability • Small dimensions • Short response time • High electrical insulation	• Interchangeable • Moisture resistant • Stability
Accuracy	According to DIN EN 60751	Class T (F0.1), A (F0.15), B (F0.3) according to DIN EN 60751	0.25% to 20%
Operating Temp.	-50 °C to 400 °C	-50 °C to 600°C (standard) down to -200 °C or up to 1000 °C (on request)	-55°C to 280°C
Dimensions (mm)	1.5 x 1.5 (top / bottom pads), 1.2 x 3.6 (SMT)	2.0 x 2.3 x 1.1 (standard), 1.2 x 4.0 x 1.1 (standard) Other dimensions (on request)	0.4 to 4.9
Typical Apps	OEM, thermal compensation, thermal management, smart phones, thermopile precision reference	OEM, thermal compensation, thermal management, smart phones, thermopile precision reference	Thermal compensation, thermal management, smart phones

TE SENSOR SOLUTIONS FOR CONSUMER

Temperature Sensors

Thermopiles

	TS Series TS318-3B0814, TS318-5C50, TS305-10C50	**TSEV** Single Pixel Series	**TSEV** Multi Pixel Series
Package	TO-18, TO-5	OEM-module	OEM-module
Type	Thermopile sensor components	Single-pixel thermopile module	8-pixels-linear array thermopile module
Temp. Range	Depends on applied electronics and calibration, filter types optimal for object temperature range -40°C to 300°C (extended range: -60°C to 1000°C)	Object temperature range 0°C to 300°C Other temperature ranges available upon request	Object temperature range -20°C to 120°C
Unique Features	• High signal output • Accurate reference sensors	• Calibrated, Interfaces: I2C, SPI • Different field of views: 5° at 50%, 10° at 50%, 90° at 50%, others on request	• Calibrated and ready to use • Digital output • Small field of view
Accuracy	Depends on applied electronics and calibration	Depends on temperature range, typical 1% full scale, max. accuracy 0.1°C	Depends on temperature range, typical 2% full scale
Operating Temp.	Ambient temperature range: -20°C to 85°C	Ambient temperature range: 0°C to 85°C	Ambient temperature range: -20°C to 85°C
Dimensions (mm)	9 x 9 x 17.6	35 x 25 x 13 to 31	25 x 35 x 15.2
Typical Apps	Consumer thermometer (ear, forehead), pyrometer, wellness\home automation, tele-medicine temperature	Contactless temperature measurement on moving parts, tele-medicine temperature	Contactless temperature measurement on moving parts, tele-medicine temperature

Force Sensors

	FX19	**FS20**	**FC22**
Package	Low profile “coin cell” design	Miniature; drop in replacement for industry standard	Plastic housing, button, flange mounting
Operating Mode	Compression	Compression	Compression
Unique Features	• Ultra low cost, low strain design • Essentially unlimited cycle life	• Load cell design operates at very low strains • Not subject to lead die fatigue	• Low cost button shape • Essentially unlimited cycle life
Ranges (Lbf)	10, 25, 50, 100	1.5, 3	25, 50, 100
Max Over-range	2.5X	10 lbf	2.5X
Output/Span	100 mV	1.0 to 4.0 V	100 mV, 0.5 to 4.5 Vdc
Combined Linearity & Hysteresis	±1.0% FSO	±1.0% FSO	±1.0% FSO
Operating Temp	-40°C to 85°C	0°C to 70°C	-40°C to 85°C
Dimensions (mm)	Ø 25.00 x 29.50 x 8.00	30.708 x 17.272 x 8.255	Ø 26.00 x 42.00 x 19.50
Typical Apps	Consumer OEM, exercise machines, physical therapy	Contact sensing, consumer appliances	Exercise machines, contact sensing

Piezo Film Sensors

	Piezo Cable	CM-01	FLDT1	LDTC Analog PCB
Package	Shielded coaxial 20 gage piezo cable	Metallized plastic housing	Unshielded film element with screen printed leads	Evaluation PCB platform for vibration sensor
Type	Polymer jacketing; armored jacketing	Contact microphone	Flexible film, adhesive mount	Amplified analog output
Range	µPa sensitivity	40 V/mm; 8 Hz to 2.2 kHz	15 mV/µε, up to 1% strain	1 Hz to 117 Hz
Unique Features	• Continuous lengths to 1km • Shielded construction	• Low noise • Vibration and impact sensing • High sensitivity	• Thin, flexible • Leads screen printed on film • Connects to standard connector	• Low power • High sensitivity • Analog and digital signal access points
Accuracy	±20% (typical)	N/A	±20% typical	±20%
Operating Temp	-40°C to 85°C (up to 100°C available)	5°C to 60°C	-40°C to 70°C; higher available custom	-20°C to 85°C
Dimensions (mm)	3 mm diameter; continuous lengths	18 dia x 11 high	12 x 30 active; custom available	33 x 46
Typical Apps	Perimeter and fence security, intrusion detection	Contact microphone, vibration and impact sensing	Event timing, dynamic strain, motion detection	Vibration sensing, wake-up sensor, activity sensor

	40 kHz Transmitter/Receiver	80 kHz Transducers	DT1 & SDT1
Package	Plastic cage with mounting tabs	Pin mounted	Unshielded element with twisted pair or shielded element with shielded cable
Type	Air ultrasound transducer	Air ultrasound transducer	Flexible film, adhesive mount
Range	40 kHz	80 kHz	15 mV/µε up to 1% strain
Unique Features	• Wide horizontal beam angle • Low Q Resonance • Excellent impact resistance • Low cost • Lightweight	• Small size • Low mechanical Q • Shielded package	• Thin, flexible, robust • Withstands up to 1% strain • Ultra-low power (self generating)
Accuracy	Application dependent	Application dependent	±20% (typical)
Operating Temp	5°C to 60°C	-20°C to 80°C	-40°C to 70°C (up to 125°C available)
Dimensions (mm)	15 dia x 31.4	6 dia x 9	Application dependent
Typical Apps	2D position detection, digitizer, distance measurement, object detection	Air ranging, ultrasonic mouse, digitizers	Dynamic strain gage, contact microphone, acoustic pickup

TE SENSOR SOLUTIONS FOR CONSUMER

Position Sensors

Anisotropic Magnetoresistive (or AMR) Sensor ComponentsModules

	KMY, KMZ	MS32	KMT32B	KMT36H	KMA36
Package	SOT-223, E-line 4 pin	TDFN 2.5 x 2.5	TDFN 2.5 x 2.5, SO-8	TDFN 2.5 x 2.5	TSSOP
Type	Linear low field sensor	Low field switch sensor	Angle sensor	Angle sensor	Angle sensor
Range	-2 to +2 kA/m magnetic field	1 to 3 kA/m magnetic switching field	180° angle	360° angle	360° angle
Unique Features	• High sensitivity • Low hysteresis • Linear to uniaxial field strength	• Linearized ratiometric output • Temperature compensated switching point	• High accuracy • High resolution	• High accuracy • High resolution • 360° full turn	• Low cost MR encoder for rotational and incremental measurements
Output	Ratiometric with output voltage range 20 mV/V	Ratiometric with output voltage range 10 mV/V	Sine / cosine signals with output voltage range 20 mV/V	Three 120° phase shifted output signals with output voltage range 20 mV/V	Voltage 0 - 5 V I²C Customer specific
Resolution	Typ. 0.1% of range	Typ. 0.1 kA/m	Typ. 0.01° to 0.1°	Typ. 0.01° to 0.1°	Typ. 0.1°
Accuracy	Typ. 1.0% of range	Typ. 0.1 kA/m	Typ. 0.1° to 1.0°	Typ. 0.1° to 1°	Typ. 0.3°
Operating Temp	-40°C to 150°C	-25°C to 85°C	-40°C to 150°C (175°C on request)	-40°C to 150°C	-25°C to 85°C
Dimensions (mm)	SOT: 6.6 x 7.0 x 1.6 E-line: 16 x 4.2 x 2.4	TDFN: 2.5 x 2.5 x 0.8	TDFN: 2.5 x 2.5 x 0.8 SO-8: 5 x 4 x 1.75	TDFN: 2.5 x 2.5 x 0.8	TSSOP20: 6.5 x 6.4 x 1.2
Typical Apps	Smart fan rotation detection	Reed switch replacement - IoT	Rotary position encoding - IoT	Rotary position encoding - IoT	Linear and rotary position encoding - IoT

Position Sensors

Tilt Sensor - Dual Axis

	DPL/DPN-Series
Package	PCB board
Type	Inclination board module
Range	±2° to ±30°
Unique Features	• High resolution • Minimal temperature drift • User configurable
Output	Voltage / RS 232 / SPI
Resolution	—
Accuracy	±0.05° to ±0.8°
Operating Temp	-40°C to 85°C
Dimensions (mm)	45 x 45 x 14
Typical Apps	Laser leveling, building monitoring

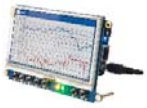
Photo Optic Sensors

	ELM 4000	EPM 4001
Package	Lead frame construction	Lead frame construction
Type	Emitter assembly	Detector assembly
Range	660 nm / 880-940 nm	—
Unique Features	• Low cost • Dual drive • Clear epoxy lens	• Low cost • Fast response • High efficiency
Accuracy	Sensor dependent	Sensor dependent
Operating Temp	-55°C to 70°C	-55°C to 70°C
Dimensions (mm)	4.4 x 5.1 x 1.9	4.4 x 5.1 x 1.8
Typical Apps	Pulse oximetry	Pulse oximetry

DCS Wireless & Sensor Hub

In support of the Digital Component Sensor (DCS), TE Sensor Solutions has developed a partnership with a semiconductor manufacturer to provide Plug & Play tools for customers that help integrate sensors and reduce time to market.

	Wireless Sensor Tag Demo
Sensors	HTU21D, MS5637, MS8607
Type	Humidity (0-100% RH) Pressure (300 to 1200 mBar) Temperature (-20 to +85°C)
Protocol	Bluetooth Low Energy 4.0
Emission	+0 dB
Range	+15m open field
Battery	CR2032
GUI	Android, iOS, PC
Typical Apps	Weather station, datalogging, altimeters, smart phones, tablet accessories



	Partner Compatible Demo Kits			
Sensors	HTU2xD (F) MS5637 MS8607 TSYS01 TSYS02 KMA36 (R&L)	HTU2xD (F) MS5637 MS8607 TSYS01 TSYS02 KMA36 (R&L)	HTU2xD (F) MS5637 MS8607 TSYS01	HTU2xD (F) MS5637 MS8607 TSYS01 TSYS02 KMA36 (R&L)
TE Demo	• Pmods (Peripherical Modules) • Xilin Bare Metal Drivers	• Wing Boards	• PicTail Plus Weather	• Pmods (Peripherical Modules) • & Drivers for Linux
Partner	Zedboard, MicroZed, PicoZed	ATMEL (SAMD2x Cortex M0 & M4)	Microchip (Explorer 16)	TI (Beagle Bone Black)

PRODUCT AND APPLICATION MATRIX

	Force	Humidity	Photo Optic	Piezo Film	Position	Pressure	Temperature
Mobile (Smart) Phones		●	●			●	
Multi-Function Watches			●			●	●
Fitness Equipment	●		●	●	●		●
Weather Stations		●				●	●
GPS Devices						●	
Hobby Drones		●			●	●	●
Room Comfort		●				●	●
Hair Care							●
Sleep Monitors			●	●			
Smart Writing Tools				●			
Cycle Computers	●				●	●	
Smart Scales	●					●	
Dive Computers						●	
Smart Sensor Hub		●			●	●	●

QUALITY STATEMENTS*

- AS/EN 9100
- ATEX
- ATEX 949EC
- CE-MDD
- CMDR – Health Canada
- EN 13980
- ESA 266
- ESCC266E
- ESCC 400C
- FDA
- ISO 13485
- ISO 14001
- ISO 9001
- Measuring Instruments Directive 2004/22/EC annex D
- NASA Qualified
- NSF-61 Water Quality
- PART21G
- TS 16949

*Represent All Markets.

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