

THE RIGHT SENSOR AND MEASUREMENT SOLUTION
FOR YOUR APPLICATION



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SENSOR TECHNOLOGY
AUTOMATION SOLUTIONS
SERVICES & APPLICATIONS

ALTHEN
SENSORS & CONTROLS



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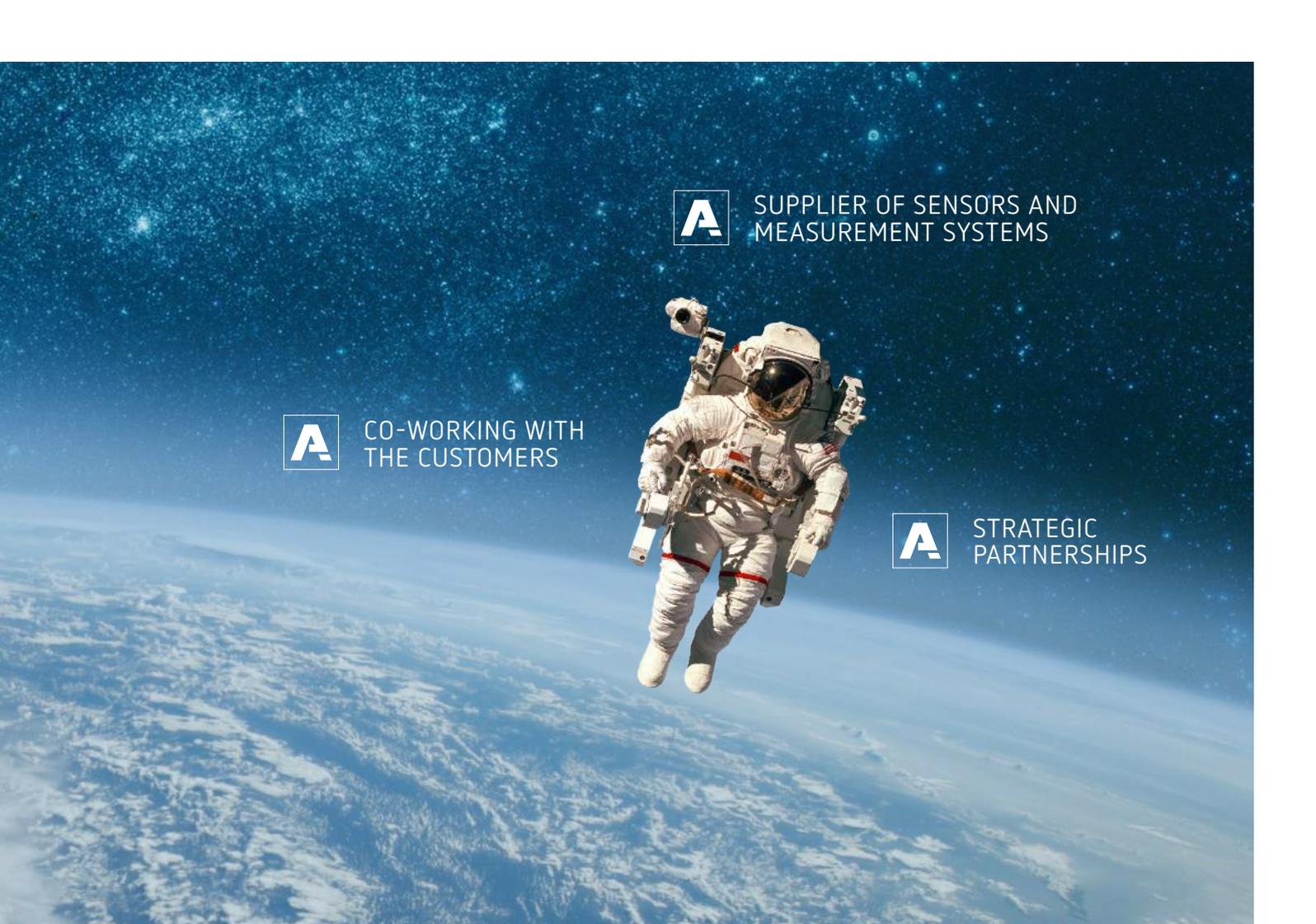
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**We provide confidence
for visionary engineers**

**We believe in
your dreams.**

**Together we
build the future.**



SUPPLIER OF SENSORS AND MEASUREMENT SYSTEMS



CO-WORKING WITH THE CUSTOMERS



STRATEGIC PARTNERSHIPS

Why

Certainty is at the heart of everything we do. We provide confidence for visionary engineers, so they dare to dream bigger. We make sure things are exactly right. We love technical challenges, we love the puzzles, together we build the future.

How

We see the bigger picture, understand the toughest problems and co-create, working alongside anyone with a technical challenge. We love solving problems and to contribute to your vision.

What

Althen provides you with a team of expert engineers. We help to solve your challenges in co-creation, with sensors and controls solutions off the shelf or 'made to measure'. We are recognized for our ability to deliver customized turn-key solutions in combination with a great service.

MISSION STATEMENT

Sensors enable the world of tomorrow

OUR STORY IS ABOUT MORE THAN SENSORS AND CONTROLS.

It is about ambition. It is about evolution. It is about shaping the future. The development of our sensors and our expert technical knowledge is not only part of our profession, they actively shape the future.

Because sensors can do more. Tools are what lifted people above the animals.

And our sensors & controls are the ultimate tools.

They give us the power to measure things that are incredibly heavy. Or immense. Or tiny.

They give us the power to see in the dark. Into space.

To venture into the deep sea.

They open worlds normally not accessible for human beings.

Sensors give us the ability to realize even the biggest dreams. To capture things that go beyond our senses. They give us the knowledge and confidence we need to create, develop, and explore new places.

AT ALTHEN WE BELIEVE IN THE REALIZATION OF BIG DREAMS.

If you can dream it, you can build it.

That is why our little sensors are often part of a much bigger plan, like The Ocean Cleanup.

Or The Hyperloop. But it is not size that matters to us.

It's the challenge. We love solving problems.

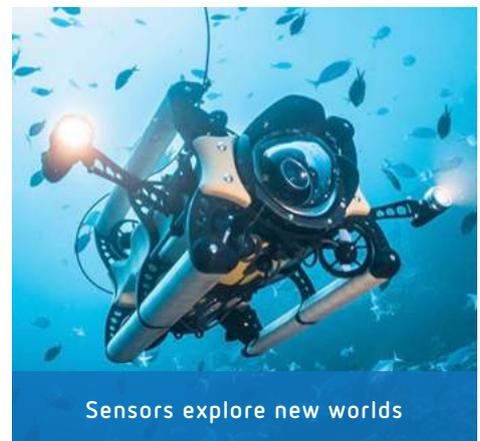
Nothing is too small to deserve the highest accuracy.

No dream is too big. No decimal too small.

Whatever the measuring job, there is always an engineer behind it. With an idea, a plan, a vision. Someone who sees the bigger picture.

Every day we team up with these engineers. We share expertise and we ensure that they have the right tools for the job.

We give them the confidence to dream bigger, so that even the biggest dreams become reality.



We are Althen. We design sensors. We enable the future.

ABOUT ALTHEN SENSORS & CONTROLS

The right sensor and measurement solution for your application



FOR MORE THAN 40 YEARS ALTHEN SENSORS & CONTROLS IS STANDING FOR PIONEERING MEASUREMENT AND SENSOR SOLUTIONS.

In our product portfolio all physical parameters are represented. As we are always looking for the newest innovations, we will not be satisfied until we have found the perfect solution for your measurement task. Our in-house production and design department, customer-specific sensors and measurement systems are created for almost all applications in many different industries.

In order to get the best and most efficient solution for your measurement requirements, we use different technologies and choose the right products for you from our large portfolio which fits your application best. Our experienced specialists advise you professionally and with all necessary details needed.

Althen is a partner of many recognized universities and leading corporations. Together we develop the technologies of the future.

Althen was one of the first companies in the industry to be certified by the certification body of TÜV Hessen in accordance with DIN EN ISO 9001: 2015.

YOUR BENEFITS

- More than 40 years of experience in sensors and measurement systems
- Industry specific knowledge about requirements and certifications
- In-house electronics design and production
- Development of customized sensors (also for low volumes)
- Development of customized measurement systems (no MOQ)
- Technical consulting for selecting the right product
- High service level with in-house calibration and repair department
- One-stop-shop experience for your sensors and measurement challenges

ADDITIONAL INFORMATION

- althensensors.com/about-althen



OEM, TEST & MEASUREMENT AND IIoT SENSOR SOLUTIONS

Tailored solutions for different application areas



OUR DIVISIONS

Althen has organized its customer projects into three divisions: OEM, Test & measurement, and IIoT sensor solutions. Although there are a lot of similarities in these projects, they are also very different in nature, which is why they require a different approach in terms of process.

OEM SENSOR SOLUTIONS

Althen is your expert partner for standard and custom OEM sensor solutions. We help our customers with innovative sensing and measurement solutions. OEM manufacturers often simply can't find the sensor solution that fits their system. Every application is different and often there is a need for a custom design to fit the specific design of the customer. That is where our engineers will co-design a new sensor which meets these unique specifications. Whether it is a force sensor, a torque sensor, a pressure sensor, a displacement sensor or a rotary sensor, we are ready for the challenge.

TEST & MEASUREMENT SENSOR SOLUTIONS

Measure what can be measured and make measurable what can't be measured. When it comes to our Test & Measurement solutions, in many cases custom solutions or turn-key measurement systems are needed. We are your application specialist applying our strong knowledge in different sensor technologies to create the best possible sensor or to develop the best fit measurement chain often existing of sensors,

amplifiers, electronics, and data acquisition modules. From multichannel pressure measurement systems to position measurement systems with nano-meter resolution, Althen is your partner.

INDUSTRIAL IOT SENSOR SOLUTIONS

In a world that is becoming more and more digitally connected, also our measurement solutions are evolving. At Althen we combine our strong knowledge in sensor hardware with wireless data transmitting, data storage, smart dashboards and software in order to create full measurement solutions from sensor to information. From applications in condition monitoring where wireless vibration sensors are connected or battery powered measurement solutions in the railway market, the possibilities are endless. What is your challenge?

YOUR BENEFITS

- Over 40 years experience in sensor technology
- Development capabilities of customized sensors
- Experience with OEM development trajectories
- Lean project management for T&M applications

ADDITIONAL INFORMATION

- althensensors.com/custom-solutions
- althensensors.com/industries



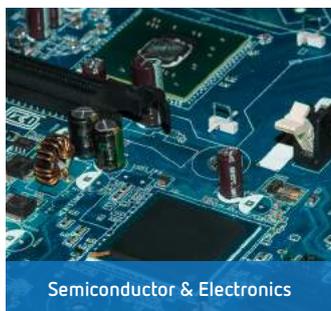
WE KNOW WHAT IS IMPORTANT FOR YOUR INDUSTRY

We provide confidence for visionary engineers

OUR CORE INDUSTRIES

Every industry has its own challenges and niche characteristics. Our engineers understand that new developments come together with new challenges, and that is where we can team-up. By understanding the bigger picture, the vision, it becomes possible to really understand the requirements in your measurement challenge.

With our specialists who have grown specific knowledge about specific industries, we are able to speak the same language. Whether it's about special medical certifications, or safety integrity levels which need to be realized, we make sure to bring the right expert engineer to the job.



PRODUCT OVERVIEW

The right sensor and measurement solution for your application

bar

PRESSURE

Pressure transducers and pressure sensors with measuring ranges from 35 mbar to 12.000 bar. A wide offering of standard, Miniature, High accuracy, Differential, Wireless sensors for gas and liquid media.



kg

WEIGHT

Loadcells and weighing sensors for measuring weights from 10 gram up to 1500 tonnes. Low-cost items for applications in the automation industry.



N

FORCE

Force transducers and load-cells with measuring ranges from 0.5 N to 1500 kN. Also 2-,3-, and 6 component sensors for measuring forces in multiple dimensions.



Nm

TORQUE

Torque sensors and measuring systems for measuring static reaction torque and dynamic rotating applications with ranges from 10mNm to 13kNm.



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STRAIN

Electrical strain gauges and Fiber-optical (WLPI) strainsensors, measuring ranges from $\pm 500 \mu\epsilon$ to $\pm 5,000 \mu\epsilon$. Special variants for extreme environments.



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ROTATION

Rotary sensors based on hall effect, potentiometric, inductive, encoder technology to measure from 10° to 360°.



mm

DISPLACEMENT

Linear position sensors based on hall effect, potentiometric, inductive, laser, eddy-current, and capacitive technology for ranges from 0.125 mm to 30 meter.



\angle

INCLINATION

Tilt sensors and inclination measurement systems with measurement ranges from 1° to 360° for industrial and high accurate applications, with analog and digital interfaces.



g

ACCELERATION

Servo and MEMS based accelerometers with ranges from 0.5g to 5000g. For acceleration measurement in 1-, 2-, or 3- directions.



m/s²

VIBRATION

Piezoceramic vibration sensors and vibration sensors with IEPE interface and frequency range from 0.05 Hz for vibration measurement and analysis.



°/s

ANGULAR RATE

High precision gyroscopes and inertial systems for measurement of angular rate with measurement ranges from 50° / s to 10,000° / s.



°C

TEMPERATURE

Electrical and fiber optical (WLPI, GaAs) temperature sensors, with measuring ranges from -40°C to + 250°C. Also temperature scanners for multichannel temperature measurement.



SIGNAL CONDITIONING

Analog and digital measuring amplifiers for amplifying a broad range of sensors. Single and multichannel amplifier systems, with precise, and low noise output signals.



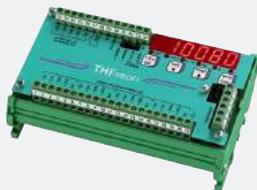
DATALOGGING

Systems for PC-based data-acquisition, data-loggers and wireless handheld modules with USB and/or Ethernet interface.



AUTOMATION

Digital amplifiers and indicators with interfaces such as Ethernet IP, Profinet IO, RS485, CAN-Open, CC-link, Profibus, Modbus TCP, Ethercat.



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TURN-KEY SYSTEMS

Individual turn-key measurement systems for customer specific applications e.g. transport monitoring, train-weighing, helicopter weighing, and several hundreds more.



OUR SERVICES

Hardware solutions are always complemented by good services to deliver a turn-key solution



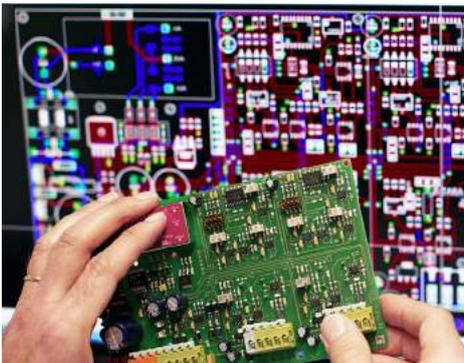
Training & Consulting



Calibration & Repair



Engineering & Development



Production & Prototyping



Measurement & Rental



Repairs

FULL SERVICE PARTNER

At Althen it is all about turn-key solutions, we believe in delivering the full package. Next to the physical hardware solution, we offer several services such as: training/consulting, calibration & repair, engineering & development, and production & prototyping. Complementary services that will provide you with full confidence.

CALIBRATION IS AN ART

Our reliable calibration service: maximum accuracy and performance for your sensors & measurement systems

Benefit from our calibration services for new purchases as well as existing measuring instruments. The regular calibration by Althen ensures that your sensors and measuring systems work exactly according to their specifications. This is the only way to achieve correct and meaningful measurement results over the long run. Our experienced experts adjust deviations and document the results with a calibration certificate. We support you not only with the calibration of standard sensors and testers, but also with individual special solutions.

Compared to other sales companies in the field of measurement technology and sensor technology, you can benefit from our in-house calibration laboratory at our headquarters in Kelkheim. Here we are able to calibrate pressure, force, position, and inclination sensors, as well as dataloggers and complete measurement systems.

ISO 9001 CALIBRATION (FACTORY CALIBRATION)

For the physical parameters of pressure, force and inclination, we also offer certified factory calibrations. The measured data is generated exclusively with traceable measuring equipment.

CUSTOM CALIBRATION

Custom Solutions Require Custom Testing: in addition to new acquisitions and existing equipment, we also offer special custom calibrations that meet your individual needs. Our experienced experts correct deviations and document the results in a calibration certificate.

CALIBRATE SENSORS AND MEASURING SYSTEMS ONCE A YEAR

On request, we regularly check your measuring instruments and repair or adjust them if necessary - even if they are not from our house! Your instruments will stay functional for a long time and work reliably. Send us your calibration request: we will gladly advise you and send you a tailor-made offer. Also we offer service level agreements (SLA's) for annual recurring calibration needs.



YOUR BENEFITS

- More than 40 years of experience in calibration
- Pressure, force, inclination, position and systems
- Customized calibrations for special system
- Fast track calibration service

ADDITIONAL INFORMATION

- althensensors.com/services/calibration



PRODUCTION

Customized solutions for your requirements:
From the prototype to the serial product

Through proven manufacturing processes, we offer you single components or complete systems from a single source. In our in-house production we provide you with accessories for data-loggers as well as complete solutions for the measurements of pressure, force, inclination, acceleration or displacement.

We select the right components for your measuring task from a large number of standard products. According to demand, we produce single pieces or in series. With the help of prototypes, you can test whether the products integrate perfectly into your existing systems and fulfill their task. Of course, we always keep the costs in sight.

PRECISE PRODUCTION TECHNOLOGY FOR YOUR PRODUCTS

Our production technology meets the latest standards. The result is a sophisticated technology of the highest quality. In our in-house calibration laboratory, we test your products carefully including endurance test. This guarantees that your products will work smoothly in the field. Every product that leaves our production department performs its measuring and sensor tasks efficiently and reliably. Upon completion, we will support you during commissioning.

COMPLETE SOLUTIONS FOR YOUR MEASURING TECHNOLOGY

Experience makes the difference: complete measuring systems for industrial metrology applications.

A measuring system consists of one or more sensors and the appropriate measuring amplifier and measuring data acquisition system. As an experienced partner, you will receive everything from one source at Althen. Regardless of whether you are looking for a measuring amplifier for a strain gauge or multi-channel measuring system for force / distance measurement with measurement data recording on a PC - we have the right solution for you.

Measuring systems from Althen not only include the sensors, signal conditioning and display or recording, but can also be supplied with all necessary cables, power supplies and other accessories if required. It is also possible to integrate the measuring system in customer-specific housings. You can rely on the advice and assistance of our specialists at any time, at the beginning of the project, during order and order processing and after delivery. We also help with commissioning and recalibration after delivery.

YOUR BENEFITS

- Design and manufacture customized products for your complex measurement task
- Competent, vendor-neutral advice
- In-house electronics design & production
- Development of customized sensors
- Development of complete measurement systems
- Support from brainstorming for applications to technology planning to product selection
- High service level with in-house calibration and repair department

ADDITIONAL INFORMATION

- althensensors.com/services/production



SOLUTIONS FOR TEST & MEASUREMENT, OEM AND IIOT

Tailor-made measurement technology that meets the highest quality standards

ROTATION AND TILT SENSOR FOR POSITION FEEDBACK IN NEW MULTIFUNCTIONAL MACHINE



FCP22A Potentiometer & DOG2 Mems inclinometer

Servo mounted potentiometer with 22 mm outside diameter & J1939 Canbus interface inclinometer for automotive.

CUSTOM STATIC REACTION TORQUE SENSORS FOR FORCE FEEDBACK IN ROBOTICS APPLICATION



ATF311 Torque sensor

Static torque sensor with a fully custom aluminum design with special dimensions to fit the application.

OVERLOAD PROTECTION IN MEDICAL MRI MACHINE



FC23 miniature force sensor

Custom force sensor with integrated amplifier which is certified for usage in the medical industry.

SOLUTIONS FOR TEST & MEASUREMENT, OEM AND IIOT

Tailor-made measurement technology that meets the highest quality standards

LINEAR AND ROTARY POSITION FEEDBACK OF LARGE STEERABLE BOW THUSTERS IN SHIPS



mm

α



18LP Linear & FCP50A Single-turn potentiometer

Accurate position feedback for positioning of the angle of the blades and the operational angle of the total thruster.

ROTARY POSITION FEEDBACK FOR MARITIME CONTROL HANDLES IN BRIDGE APPLICATIONS



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FCP40A Single-turn potentiometer

Rotary position feedback in control handles for ships.

ROBUST AND ACCURATE INCLINATION MEASUREMENT FOR OFFSHORE HYDROHAMMERS



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α



PNS-IP-24E Inclinometer system

For very accurate inclination measurement, and resistant against great vibrations and shocks.

LOAD SHACKLE FOR FORCE MEASUREMENT WHEN TOWING AN OCEAN CLEANUP SYSTEM OFFSHORE



N
1010



ALS-B-1000 Load shackle

Load shackle for lifting and weighing in harsh environments, including submersible applications.

WIRELESS TORQUE MEASUREMENT IN AIRCRAFT TEST BENCHES



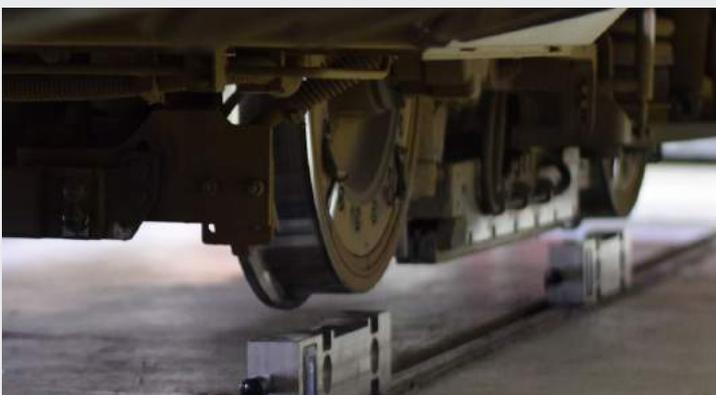
Nm



RWT410 / RWT420 Torque

Digital torque transducer with integrated electronics

WIRELESS WHEEL LOAD MEASUREMENT SYSTEM FOR WEIGHING OF TRAMS AND SUBWAYS



A



Wireless wheel load measuring system

Designed for precise weighing and determining the balance of each individual axle.

SOLUTIONS FOR TEST & MEASUREMENT, OEM AND IIOT

Tailor-made measurement technology that meets the highest quality standards

A MOBILE AND BATTERY POWERED SYSTEM FOR MEASURING THE CENTER OF GRAVITY FOR HELICOPTER MAINTENANCE



HS-GL-20 Helicopter balancing system

Tilt measuring system for turbine mounting

INCLINATION MEASUREMENT FOR ALIGNING TURBINE BLADES DURING INSTALLATION



NM1-IP-ACCU-B03

Tilt measuring system for accurate alignment during mounting of blades

EARTHQUAKE MEASUREMENT SYSTEM FOR MAKING REMOTE HYDROGEN INSTALLATIONS SAFE



VIB-3A-IP-24-SP-Z0033

Vibration monitoring

3-axial vibration system with 3 programmable safety switches for monitoring of earthquakes.

EDDY CURRENT POSITION MEASUREMENT FOR ACCURATE POSITIONING OF MIRROR ON LCT SATELITE



mm



KD-5100 Eddy current sensor

Difference measuring system with a differential resolution up to a nanometer

MULTI-CHANNEL PRESSURE SCANNER FOR APPLICATIONS IN WINDTUNNEL TESTS



A

bar



MPS4264xx Miniature pressure scanner and accessories (serie)

State of the art miniature 64 channel pressure scanner with digital interface for extreme accurate pressure scanning.

WIRELESS WEIGHING SYSTEM HELINAV FOR HELICOPTER APPLICATIONS



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AWLH-10 HeliNav Wireless weighing system

An accurate and easy to install weighing system for helicopters with wireless communication between loadcell and receiver.

SOLUTIONS FOR TEST & MEASUREMENT, OEM AND IIOT

Tailor-made measurement technology that meets the highest quality standards

ROBUST, WIRELESS SENSORS FOR DEMANDING APPLICATIONS IN STERILE ENVIRONMENTS



Nm



ORT 230/240 Torque sensor

Optical torque sensor for precise dynamic measurement of rotating and static torque

MEASUREMENT OF TAKE-OFF FORCES ON SKI JUMP SLOPES



N



AM Single-point load cell

Load cell for platforms 400 x 400mm

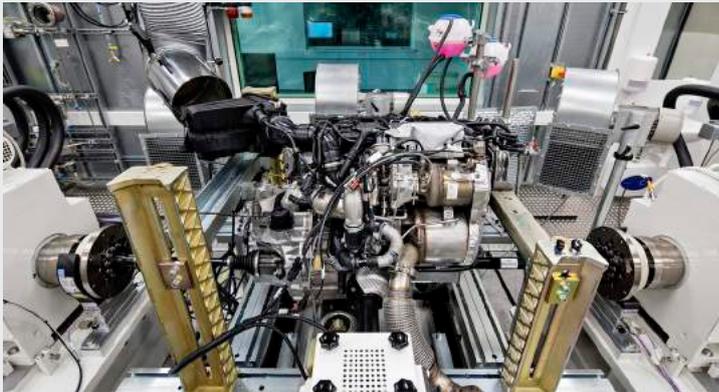
DATA LOGGER FOR VALVE DIAGNOSTICS



GL240 Compact datalogger

Compact data logger for 10 measuring channels

PRESSURE MEASUREMENT IN AUTOMOTIVE ENGINE TEST BENCH



bar



P900 High precision pressure transducer

For accurate (0.1% FS) measurement of pressure variations during engine tests

PRECISE ALIGNMENT OF ANTENNA MASTS



Tilt measurement system

For aligning antenna masts or Leveling platforms

INCLINATION MONITORING OF HEAVY OR SENSITIVE GOODS



NM1-IP-2L Tilt measurement system

1-axis system for inclination measurement in aluminum housing (IP68)

WHAT IS YOUR CHALLENGE?

We believe in your dreams

Hardly any product is as versatile as a sensor. Whether it is in the automotive, aerospace, maritime, offshore, civil, or medical industry the possible needs and fields of applications are still growing with new and more challenging demands.

On our website you can find some exciting examples and insights into complex technical measurement solutions we have developed together with our customers. We hope to be able to add your success story soon!

ADDITIONAL INFORMATION

■ althensensors.com/application-stories



SOME OF OUR CLIENTS



THE RIGHT SOLUTION FOR YOUR CHALLENGE

Everything from one source

Thanks to our decades of experience, we at Althen can provide both standard and highly specialized custom sensors as well as complete measurement systems for our customers.

Our product portfolio covers all physical measurements, and we use a wide range of technologies to ensure you always get the best solution for your measurement requirements. Thanks to our vast knowledge, technical expertise, our strong team of engineers from various professional backgrounds, and our broad range of products, we can offer you the most efficient solution for almost any application in every industry.

Our team will be happy to give you advice! You can call us at **+31 (0)70 3 92 44 21** and get in contact with one of our expert engineers, or send an email to **sales@althen.nl**.

Welcome at the world of Althen,
We provide confidence for visionary engineers.

OUR PRODUCT SCOPE

 bar	PRESSURE	 mm	DISPLACEMENT	 m/s²	VIBRATION		AUTOMATION
 N	FORCE	 α	ROTATION	 °/s	ANGULAR RATE		TURN-KEY SYSTEMS
 Nm	TORQUE		JOYSTICK	 °C	TEMPERATURE		
 ε	STRAIN		INCLINATION		SIGNAL CONDITIONING		
 kg	WEIGHT	 g	ACCELERATION		DATALOGGERS		



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