



Product Overview

Mining | Water | Wastewater | Chemical | Oil & Gas | Plastic | Power

For more information, please visit >
www.hawkmeasurement.com





HAWK's Vision & Mission Statement

Vision

**Above & Beyond:
Every action soars towards excellence in process technology solutions**

Mission

**A high performance team, working together,
to provide high quality service and products, every time!**



About HAWK

Hawk Measurement Systems (HAWK) is the world leader in level, positioning, asset monitoring and flow measurement technology, providing cutting-edge equipment and complete solutions to the global industrial market.

Established in 1988, HAWK has won several prestigious awards for their breakthrough technologies. Some of these technologies include Acoustic Wave, Ultrasonic, Microwave, Radar, and Fiber Optic Sensing. HAWK designs and develops innovative measurement technology that is extremely reliable and accurate, simple to install, easy to operate and offers maximum efficiency.

For over 30 years, HAWK has successfully solved difficult liquids and solids applications in a wide range of industries including mining/mineral processing, water supply/waste water, oil & gas, bulk material handling, chemical, power, cement, pulp & paper and food. HAWK is committed to providing best-in-class products, services and technologies that will have unsurpassed value for their customers. HAWK currently has two manufacturing facilities, headquarters in Melbourne, Australia and the USA manufacturing facility in Medina, Ohio.



Application Solutions



HAWK products are inherently designed to solve application issues, and we adapt the technology to suit the environmental requirements.

Fiber Optic Sensing

Fiber Optic Sensing is a relatively new facet of industrial instrumentation but there does exist a number of manufacturers in the market place. However, when one is looking for the superior choice in aspects of capability Praetorian stands alone.

HAWK's Praetorian is the only system that offers a single interrogator that measures Distributed Acoustic Sensing (DAS), Distributed Temperature Sensing (DTS) and Distributed Strain Sensing (DSS) all in a single enclosure. The advantage of making these measurements in a single system means that parallel measurements of strain, temperature and acoustics may be made in their most basic form by a single processor in real time allowing for better pattern recognition resulting in faster acquisition and confirmation of events.



Acoustic Wave

In general, ultrasonic technology has difficulties detecting signal in dusty and agitated environments. Acoustic Wave products were created specifically for these issues. They use higher power and lower frequency than ultrasonic devices. This allows the pulse to travel with minimal signal losses. Echoes are detected where previously impossible. Stand next to an Acoustic Wave product, and you will easily hear the difference in the applications power of the pulse. A technology with no direct comparison.

Self Cleaning

Many applications have issues with material buildup on the face of their level control instrumentation. This results in costly and time consuming maintenance, or expensive and difficult cleaning systems involving water jets and compressed air. Acoustic Wave products use the power of their pulse to continually clean the transducer face, eliminating this requirement.



Advanced Microwave Transmission

HAWK Microwave technology uses high power and low frequency to achieve superior performance over distances of up to 200 meters in more difficult conditions. It is non contact, and can be installed outside of hazardous environments.

Sonar - Accurate Interface & Bed Level

HAWK's revolutionary Sonar system provides accurate and continuous measurement of interface and bed level in thickeners, resulting in optimized operation of underflow densities, reduction of chemical use and improved efficiencies of settling rates.

Guided Wave Radar

HAWK's guided wave radar system has high sensitivity to ensure it is capable of detecting level in a large range of applications.

Switches

HAWK has a complete range of high quality detection switches to suit a range of applications and industries. This includes vibration fork, admittance and conductivity detection principles.



We Can Help



HAWK understands the difficulties customers face when seeking accurate level measurement. Every application is different, involving a multitude of environmental factors. This is where HAWK excels. Our aim is to ensure that customers feel comfortable with our technology, and are provided with long term and reliable solutions. We believe that a combination of application and product expertise, as well as forward thinking and proactive support policies are the foundation of successful customer-supplier relationships.

Progressive Technical Support

HAWK believes that the future of the Level Measurement Industry revolves around the quality of pre and post sales-support. Our aim is for all sales & support staff to be product experts, and more importantly application experts making our customers applications as efficient and consistent as possible.

Remote Innovation

HAWK understands the need for immediate technical assistance.

The HawkLink 3G communication device allows any computer with internet access and our free GosHawk diagnostic & calibration software; to dial in; calibrate, test, and check the performance of HAWK products. This innovative system allows our Global Support Team to assist with commissioning and after sales service of HAWK equipment worldwide. Measurement problems are addressed as they happen; not days or weeks later.

Knowledge Sharing

HAWK believes that knowledge sharing is key to creating long term relationships.

Empowering our customers and our worldwide distribution network, whilst being available at all times to lend a helping hand, is the perfect recipe for long term solutions and relationships.

HAWK openly extends an invitation to share our 30 years of level measurement experience, and ensure that your day to day processes are efficient, understood, and always working.





Product Overview

Fiber Optic Smart Sensor Technology

Praetorian

Fiber Optic Sensing (FOS)

The Praetorian Fiber Optic Sensing series is used in applications where large scale linear assets require monitoring or protection.

Capable of detecting Vibration, Strain and Temperature changes along a fiber optic cable installed along the monitored asset.

Praetorian can be used in a number of large scale asset monitoring tasks including:

- **Praetorian FOS for Conveyor Idler Monitoring**
- **Praetorian FOS for Perimeter Security & Threat Detection**
- **Praetorian FOS for Pipeline Monitoring, Leak Detection System**
- **Praetorian FOS for Tailings Dams Monitoring**
- **Praetorian FOS for Power and Data Cable Monitoring**



Continuous Level Transmitters

Sultan Acoustic Wave Series

The Sultan is a non intrusive Acoustic Wave transmitter with flexibility used for level measuring liquids, slurries and solids.

The transmission of Acoustic Waves ensures minimal losses through the environment where the sensor is located. Remote, Integral & SMART units are available. The Sultan can operate as a 2, 3 or 4 wire system.



Continuous Level Transmitters

MiniWave Ultrasonic Level Series

MiniWave is a compact, loop-powered ultrasonic level transmitter for continuous measurement of liquids.

Easy and flexible mounting combined with high chemical compatibility and 12 metres (40ft) measuring range makes the MiniWave suitable in multiple applications in all industries.



Continuous Level Transmitters

Senator Free Space Radar

HAWK's Free Space Radar Level Transmitters are non-contacting and use Frequency Modulated Continuous Wave (FMCW) technology.

They have the ability to measure distance, level, and volume of liquids, solids, corrosives, powders, granulates, rocks, pastes, and hygienic liquids.

There are six transmitters to choose from, providing a solution for practically any application.

- Extensive choice of process connections starting from 3/4"
- Lens, Drop and Horn antennas to suit all process and installation conditions
- Measuring range from the antenna edge up to 100 m; 328 ft

Senator 80GHz

Model types:

- **Senator S80L (Liquids)**
- **Senator S80H (Hygienic / Liquids)**
- **Senator S80P (Powders / Fines)**

Senator 24GHz

Model types:

- **Senator S24W (Liquids)**
- **Senator S24L (Liquids)**
- **Senator S24C (Corrosive / Liquids)**
- **Senator S24S (Solids, Granulates, Rocks)**



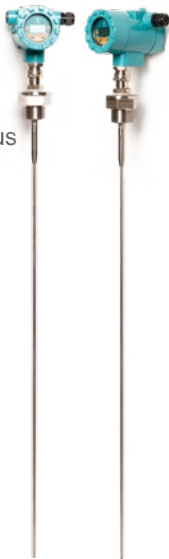
Product Overview

Continuous Level Transmitters

Centurion Guided Radar

The HAWK range of Guided Radar products are ideal for the measurement of liquids, sludge, powders and granules to a range of 38m (124ft) for level. This technology is not affected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe.

The precise and continuous level measurement technology of the HAWK Centurion Guided Radar (CGR) is spot-on for a variety of applications such as Chemicals, Petrochemicals, Cement Powders, Grain Industry, Paper & Pulp and Oil & Gas.



Blocked Chute Protection Switches

Circular Polarization & Dynamic Gain Control

Gladiator

Gen 3 Microwave Switch Series

The Gladiator Gen 3 Microwave provides point level detection of most solid materials.

It can be used in any application where microwave energy is absorbed by the material being monitored, and replaces traditional contact switching devices.



Blocked Chute Protection Switches

Circular Polarization & Dynamic Gain Control

G1 Microwave Switch Series

The G1 Microwave Switch can be used for blockage detection, barrier detection, machine detection, collision detection for protection, point level measurement, and detection of objects or material between two points.

A high power circular polarized Microwave pulse is emitted from the Sending unit to the Receiving unit in a transmission chain of approximately 100 pulses per second.



Sonar Bed Level System

Mining / Heavy Industry

ORCA Sonar System

The ORCA Sonar will measure up to two density interfaces simultaneously. Typically these are bed level / RAS blanket and floc / fluff layer. The sonar produces a high power concentrated beam, and provides critical plant control to optimize performance.

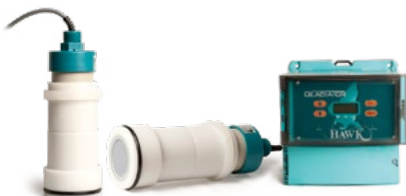


Blocked Chute Protection Switches

Gladiator Acoustic Switch Series

The Gladiator Acoustic Switch uses Acoustic Wave technology in a Sender / Receiver form for blocked chute detection, heavy machinery detection, and as a point level switch in difficult conditions.

Acoustic Wave Technology provides the added self-cleaning feature required for applications where material has the potential to coat / stick to side walls or sensor transducers.



Sonar Bed Level System

Water / Wastewater Industry

Sultan Sonar System

The Sultan Sonar uses a low frequency sonar to measure and control Waste Water Clarifiers and Thickeners. The system is easy to use and the innovative design provides critical plant control to optimize performance.





Product Overview

Magnetic Level Gauge

HAWK Magnetic Level Gauge (MLG)

The HAWK MLG is widely applied in the monitoring and process control of liquid level and interface for many industries such as petroleum, chemical, power, paper, metallurgy, water treatment etc.run dry.



Point Level Switches

Gladiator Admittance Smart Switch Series

The Gladiator Admittance switch is an all-round point level switch for detecting the level of liquid, slurry or powder.

The unit measures the capacitance or “admittance” between the probe and the wall of the container.

It operates in tough industrial environments and has high immunity to product build-up.



Point Level Switches

Gladiator Pump Protection Switch

The Gladiator Pump Protection switch can be used in applications where pipe or wall mounting with minimal protrusion is required. It can also be used to detect the presence of liquids to ensure the pump does not run dry.



Laser Level Transmitters

OptioLaser

HAWK’s Laser Transmitters feature a narrow beam to allow for accurate measurement with narrow openings. They are fully programmable and are able to acquire measurements to practically any surface, even liquids. The versatility and accuracy make them ideal for a wide range of applications such as machine detection, barrier detection and stock pile monitoring.

Model types:

- **OptioLaser L100**
(Level, Distance and Position Measurement of Solids and Liquids - up to 50m)
- **OptioLaser L200**
(Level, Distance and Position Measurement of Solids and Liquids - up to 100m)
- **OptioLaser S200 Laser Sensor**
- **OptioLaser S300 Liquid Laser Sensor**



Point Level Switches

Gladiator Conductivity Smart Switch Series

Gladiator Conductivity switches are suitable for most applications that involve conductive liquids.

It is used in food and beverage processing, chemical, oil and gas, paint, paper, pharmaceutical and water / wastewater treatment plants.



Point Level Switches

Gladiator Vibration Smart Switch Series

Gladiator Vibration switches are used for a wide range of liquids and solids. This versatile switch is suitable for many applications requiring level detection, including pump control, high or low-level alarms, for presence / absence of materials.



Point Level Switches

RS4000 Rotation Switch Series

A Rotating Switch vane is driven by a slow speed synchronous geared motor. For safe and multi-purpose level monitoring in all types of containers and silos. It can be used with all bulk materials and powders as a simple point switch.





Product Overview

Machinery Anti Collision Systems

Sultan CraneMaster Anti-Collision Systems

The Sultan CraneMaster Anti-Collision system offers major benefits when control and position functions are required for large moving machinery.



Non Contact Flow Measurement

Sultan Flow Measurement System

The Sultan Flow Measurement System is capable of monitoring liquid flow under the most difficult conditions.

It suits a broad range of flumes, weirs and flow control structures using application pre-sets or a 32 point custom measurement table.



Non Contact Flow Measurement

CorFlo CMFM Coriolis Mass Flow Meters

The Coriolis Mass Flow Meters allow for real-time measurement of density and flow in liquids, slurries, and gases. This rugged flow meter delivers accurate measurement for virtually any process fluid while exhibiting exceptionally low-pressure drop. The ideal solution for liquid and gas applications, from chemical feed to pulp and paper.



Non Contact Flow Measurement

MEMFlo Variable Area Flow Meters

These meters are no ordinary volumetric flow meters. With an excellent tolerance to suspended solids, no need for straight runs of pipe, and over 30 years of tried and true use in harsh applications, these flow meters are ideal for a wide variety of applications.

Model types:

- **MEMFlo** MFVC PVC & CPVC Corrosive Resistant Process VA
- **MEMFlo** MFTV1 Process VA
- **MEMFlo** MFT2 Process VA (Flow Transmitter)
- **MEMFlo** MFHM Process VA (High Pressure)
- **MEMFlo** MFAM Process VA



Machinery Positioning Systems

Sultan Machinery Positioning System

The Sultan Machinery Positioning System is a non contact, two piece Master and Slave distancing transmitter for ranges up to 195m / 639ft.



Non Contact Flow Measurement

UltraFlo UFD3 Ultrasonic Clamp-On Flow Meter

The Ultrasonic flow meters measure the flow of most liquids using clamp-on digital ultrasound transducers. The clamp-on transducers are made of rugged PVDF and rated NEMA 4X. They are easy to install and do not use any moving parts. Choose from either portable or fixed units.

The UltraFlo can measure most any fluid from potable water to 30% thickened sludge. This flow meter is widely used in applications such as oil and gas, water treatment, pure water, chemical, and much more.



Product Overview

Non Contact Flow Measurement

MagFlo MMFM Magnetic Flow Meter

HAWK's Magnetic Flow Meters are designed for a wide variety of liquid flow applications with line sizes ranging from 1/2" to 48". Magnetic Flow Meters are also known as Electromagnetic Flow Meters and more commonly known as a Mag Meter. Typical applications include water/wastewater, chemical, food and beverage, metal and mining.



Non Contact Flow Measurement

CalFlo Thermal Mass Flow Meters

Accurate measurement in air conditioning, dust collection, ventilation, energy consumption, potable/non-potable water, acid, oil, gas and other applications can be accomplished by HAWK's Thermal Mass Flow Meters. These meters are easy to install, and their high-quality construction will withstand industrial use.

Model types:

- **CalFlo CFTM** Thermal Mass Flow and Temperature Meter
- **CalFlo CFAF** Thermal Mass Flow and Temperature Meter
- **CalFlo CFVF1** Thermal Mass Liquid Flow Meter
- **CalFlo CFVF2** Thermal Mass Liquid Flow Meter
- **CalFlo CFAM** Thermal Mass Air Flow Meter
- **CalFlo CFHM** Low Flow Thermal Mass Flow Meter



Non Contact Flow Measurement

FloSentry & CalFlo Flow Switches

HAWK's Flow Switches feature single and dual alarm applications, adjustable flow, temperature and flow, air flow, and inline flow. The flow switches do not interfere with flow meter accuracy and many can be field adjusted. Ideal for a wide variety of applications from gas to damper regulators.

Model types:

- **FloSentry MFFS3** Universal Single or Dual Flow Switch
- **CalFlo CFSG3** Flow and Temperature Thermal Mass Flow Switch
- **CalFlo CFAS** Thermal Mass Air Flow Switch



Non Contact Flow Measurement

Gladiator Gen 3 Doppler Microwave Switch

The Gladiator switch family has extended to Flow Detection with a Doppler Flow / No Flow switch. The system is non-contact mounted behind high-wear maintenance free windows. HAWK's Solids Flow Sensor are easy to install and setup. They are available with remote or integral options. Ideal for a wide variety of applications. It detects product movement in critical applications.



Pressure and Level Transmitters

Pressure / Differential Pressure Transmitters

HAWK's line of intelligent pressure and differential pressure transmitters come complete with a local display and programmable push buttons. The transmitters have a rugged design and are made for all pressure applications in clean liquids, gases and vapors. Ideal measurement solutions from pulp and paper mills to chemical and pharmaceutical industries.

Model types:

- **Series 3000** Intelligent Pressure and Level Transmitter
- **Series 8000** Stainless Steel Pressure and Level Transmitter
- **Series DP-4000** High-Performance Differential Pressure Transmitter
- **Series 2000** Pressure and Level Transmitter
- **Series 4000** Pressure and Level Transmitter



Submersible and Hydrostatic Pressure Transmitters

HAWK's Submersible and Hydrostatic Pressure Transmitters are fully temperature compensated and are equipped with strong flush mounted diaphragms that are laser welded, resulting in perfect long-term stability. These transmitters are ideal for level measurement in waterworks, deep wells, underground tanks, and concrete bunkers.

- **Hydrobar** Submersible Level Transmitter
- **Hydrocer** Submersible Level Transmitter
- **AquaCer** Submersible Level Transmitter





Product Overview

Communication

HAWK Loop Indicator (HLI)

The HAWK loop field indicator is a versatile field display fully compatible with HAWK Level Instruments and all 2 wire loop analog devices.

The Display turns red if the Current input is out of range, or if the programmed Hi / Low Current Alarm value is reached allowing potential problematic measurement conditions to be easily detected in the field

The HLI is fully HART transparent, includes 39 pre-set unit types plus full customization making it suitable for indication of an loop device measurement.



Communication

HawkLink

Advanced Remote Communication

HAWK offers a wide range of communication possibilities: GosHawk, DeviceNet, HART, Modbus, Profibus DP, Foundation Fieldbus and Profibus PA.

Remote technical support and complete commissioning of equipment in applications via a 3G module, allows monitoring and adjustments of settings no matter what corner of the world.



Asset Monitoring and Protection

HawkEye365 Online Inventory Asset and Monitoring Portal

The HawkEye365 Online Inventory Asset and Monitoring Portal is a complete remote and in-plant measurement and monitoring system. This system is uniquely different due to the communications capabilities and compatibility with HAWK's Power over Ethernet (PoE) level sensors. The advantages to PoE connectivity are secure in-plant and remote monitoring, as well as remote sensor setup, diagnostics and troubleshooting abilities.

The HawkEye365 portal is not only compatible with PoE transmitters, but is also sensor agnostic and can monitor any type of field device such as level, flow, pressure, temperature and pH.



Asset Monitoring and Protection Wireless Monitors

CONNEX 3D

Wireless Cellular Process Monitor

The industry's first process cellular monitor that communicates to field and host devices via RS485 and transmit wirelessly through cellular data transmission to cloud based server. The server data can be displayed on any PC, Smartphone, Tablet, any device with a Web Browser. From point A to point B, the CONNEX 3D provides the user flexibility to configure any standard analog input or RS485 Modbus input using a laptop or PC USB direct programming setup tool for monitoring setup and diagnostic interface.



Asset Monitoring and Protection Wireless Monitors

CONNEX 3D

Online Asset Monitoring Portal

Remotely monitor all of your tanks and inventory assets such as tanks, battery levels, and network status in one location. The CONNEX 3D Online Portal has the ability to view data and alarm information.



Asset Monitoring and Protection PoE Monitoring System / Tank Level Monitoring System

Sultan

Acoustic Wave Level Transmitter - Power over Ethernet (PoE) Series

The Sultan Acoustic Wave Level Transmitter with Power over Ethernet (PoE) is ideal for level, flow, positioning and collision protection to a distance of 60m (196ft) or up to 180m (588ft) for extended ranges.

The advantages to Power over Ethernet connectivity are secure in-plant and remote monitoring, as well as remote sensor setup, diagnostics and troubleshooting abilities. The Sultan PoE level transmitter is compatible with the HawkEye 365 Online Inventory and Level Monitoring Portal.





Product Overview

Asset Monitoring and Protection

PoE Monitoring System /
Tank Level Monitoring System

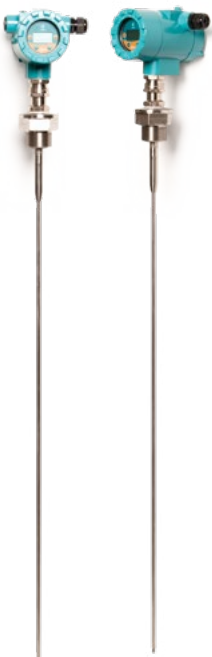
Centurion

Guided Radar Level Transmitter - Power over Ethernet (PoE) Series

The Centurion Guided Radar (CGR) Level Transmitter with Power over Ethernet (PoE) is ideal for level measurement of liquids, solids, bulk materials, sludge, powders, granules for Level and Interface to a distance of 38m (124ft). This technology is not affected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe.

The advantages to Power over Ethernet connectivity are secure in-plant and remote monitoring, as well as remote sensor setup, diagnostics and troubleshooting abilities.

The CGR PoE level transmitter is compatible with the HawkEye 365 Online Inventory and Level Monitoring Portal.



Asset Monitoring and Protection

Process Meters

CONNEX 3D

HAWK's process level meters are unlike any other monitor on the market. Instead of paying for options, you don't need, you have the ability to pick and choose from a wide variety of features that create a unique monitor to fit your exact needs, resulting in a cost-efficient reliable monitor. Select from features such as cellular, wired or wireless, single or multiple analog inputs, pump control, data logging, field or panel mount, and TCP/IP Ethernet. Every monitor comes standard with RS-485 Modbus communications. Our online cloud-based monitoring software allows you to monitor your application from anywhere in the world. Pair your process monitor with a level transmitter or flow meter to create a complete monitoring solution.

Model types:

- **CONNEX 3D** CD3D Flexible Process Meter
- **CONNEX 3D** CAIM Analog Input Module
- **CONNEX 3D** CELL Module
- **CONNEX 3D** CDDL Data Logger Module
- **CONNEX 3D** CDDM Digital Display Module
- **CONNEX 3D** CPSM Power Supply Module
- **CONNEX 3D** CDRM Radio Module
- **CONNEX 3D** DXM1 Relay and Pump Module
- **CONNEX 3D** C485 TCP/IP Ethernet Module



Real-Time Fluid Identification - PST

Non-Intrusive

Fluid ID and Monitoring

These real-time fluid identification sensors can identify liquids and potentially gases (future) inside a closed container, pipe, or vessel without coming in contact (non-intrusively) with the liquid or gas. The value of this capability is high due to the reduction in installation time and costs vs other technologies which must be in contact (intrusive) with the process liquid or gas.

Model types:

- **ALARM-ID**
- **TRANSMIX-ID**
- **PORTABLE-ID**





Services

Training

We provide extensive training for our worldwide customers and distributors on a progressive basis so when new products are introduced, training is carried out prior to release to ensure optimum product acceptance and performance.

Installation / Commissioning

Our experienced service personnel reduce commissioning time to a minimum, saving time, money and resources.

Repair Service / Field Service / Pre-maintenance

HAWK provides customers with excellent after-sales service and guarantee the ongoing function of our products by delivering high quality instruments.

Remote Technical Support

Remote technical support and complete commissioning of equipment in applications via our 3G communications module can monitor and adjust settings no matter what corner of the world.

Certifications and Approvals

- Electrical Safety
- Explosive Atmosphere (Gas)
- Dust Ignition Protection
- Radio Frequency (EMI and RFI)

Communication Protocols

- GosHawk
- HART
- Modbus
- Profibus DP
- Bluetooth
- Power over Ethernet
- Profibus PA
- Foundation Fieldbus
- DeviceNet



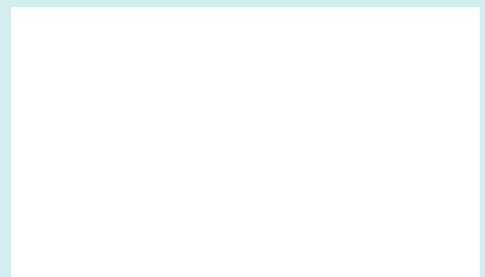
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Represented By:



For more information and global representatives: www.hawkmeasurement.com

Additional product warranty and application guarantees upon request. Technical data subject to change without notice.