

Quality  
ISO 9001

SAI GLOBAL

# CSE New Zealand

a *CSE* global company

**CSE** Genesis  
a division of CSE New Zealand

[www.cse-genesis.nz](http://www.cse-genesis.nz)

**CSE** W Arthur Fisher  
a division of CSE New Zealand

[www.cse-waf.co.nz](http://www.cse-waf.co.nz)



[www.orionet.nz](http://www.orionet.nz)

**Brands/Products We Support:** \* See entry in product section of book

### **SENSORS, AUTOMATION & TELEMETRY**

<b>BANNER*</b>	Machinery Guards, Photoelectric Sensing, Safety Products, Wireless I/O Systems
<b>EUCHNER*</b>	Safety switches, Limit switches, Pendant controllers
<b>INOR*</b>	Signal conditioners, Temperature transmitters
<b>TURCK*</b>	Proximity sensors, Speed monitors, Distance Measuring equipment, Ultrasonic level sensors, Flow Sensors
<b>4RF*</b>	Narrow band point to multipoint radio communications
<b>DATATAKER</b>	Datalogging Hardware & Software
<b>FUJI</b>	Variable speed drives
<b>GE AUTOMATION&amp;CONTROL*</b>	Programmable controllers
<b>KINGFISHER*</b>	Telemetry equipment
<b>METASPHERE*</b>	Remote telemetry RTU's
<b>MODICON*</b>	Programmable controllers & Automation Products
<b>RED LION*</b>	Indicators, Timers, Counters, Controllers, Operator Interfaces
<b>TRIO*</b>	Licensed UHF Data Radios
<b>WAGO*</b>	Automated Fieldbus systems

### **RADIO COMMUNICATIONS & CONTROL ROOM SOLUTIONS**

<b>CAMBIUM NETWORKS</b>	Microwave Equipment
<b>ICOM RADIO</b>	Aviation radio
<b>KENWOOD RADIO</b>	Analog, P25, DMR radio solutions
<b>MOTOROLA SOLUTIONS*</b>	DMR radio solutions, TETRA radio solutions, P25 radio solutions
<b>NETID</b>	Radio accessories, Audio, RSMs, Headsets
<b>TRBONET/WAVE*</b>	Asset Management Console Control Room solutions/Unified Work Group Platform

### **IIoT SOLUTIONS**

<b>Ursalink*</b>	IIoT Products
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### **SUBSTATION PROTECTION & AUTOMATION**

<b>BRAUN*</b>	Over-speed protection systems and tachometers
<b>BRÜEL &amp; KJAER VIBRO*</b>	SETPOINT Machinery Protection and Monitoring system
<b>ELSPEC*</b>	Power quality monitoring and solutions
<b>GE ALSTOM &amp; MULTILIN*</b>	Protection relays
<b>GE KELMAN*</b>	Transformer condition monitoring system, DGA (Dissolved Gas Analysis)
<b>HYUNDAI*</b>	Medium voltage motors
<b>METRIX*</b>	Machinery Protection System, Vibration Monitoring instruments
<b>PSL*</b>	Power Quality, Energy & Environment Monitoring and Solutions
<b>SIXNET, NTRON*</b>	Industrial Networking Ethernet, Cellular M2M, IIoT Gateway
<b>RUGGEDCOM*</b>	Ruggedised Substation Ethernet switches, routers, servers and media converters
<b>SOLCON MV*</b>	Soft-starters

### **INSTRUMENTS**

<b>DURAG/GRIMM*</b>	Environmental monitors, Combustion controls, Pilot burners, Monitoring & Ignition Systems
<b>FAIRCHILD*</b>	Air pressure regulators, Air volume boosters, I to P transducers, Pressure sensors
<b>FOXBORO*</b>	Control systems, Process control instruments
<b>GDS TECHNOLOGIES</b>	Gas Detection, LEL and Toxic Gas
<b>HORIBA*</b>	Environmental Emissions Monitoring, CEMS, Water & Gas analysis
<b>IN-LINE*</b>	Volume correctors
<b>MACNAUGHT*</b>	Positive Displacement Flowmeters
<b>MOISTTECH*</b>	Moisture measurement - Online and Laboratory
<b>NOVATECH*</b>	Oxygen & Combustion Analysers
<b>OMNI*</b>	Flow computers
<b>STEINFURTH</b>	Analysers & dataloggers for the beverage industry
<b>TELEDYNE*</b>	Process gas analysers, Emissions Monitoring

### **VALVES & ACTUATORS**

<b>AMAL*</b>	Combination Flame arrester/relief valve
<b>AUMA*</b>	Electric Actuators & Gearboxes
<b>BIRKETT*</b>	Safety relief valves
<b>BROOK*</b>	Isolation valves
<b>COPE-S-VULCAN*</b>	Desuperheaters, Severe Service & General Service Control Valves
<b>CRANE*</b>	Isolation & Flow Regulation Valves, Sleeved, Fully Lined & Access Jacketed valves
<b>CSE-WAF*</b>	Control valves, Temperature & Level probes
<b>CYL*</b>	Knife gate valves
<b>DELATITE*</b>	High pressure/High Temperature Isolation Valves
<b>EVOLUTION*</b>	Advanced valve solutions for severe service applications
<b>FLWSAFE*</b>	Safety relief valves
<b>JORDAN*</b>	Pressure, Back Pressure & Temperature Regulators, Control valves, Steam traps
<b>MARWIN*</b>	Firesafe Ball Valves, Speciality & Severe Service valves
<b>DIXON VALVE</b>	Multi-Port Ball Valve
<b>RED POINT ALLOYS*</b>	Customised valve solutions (Made to Order)
<b>POLYJET/BAILEY*</b>	Sleeve valve for high energy dissipation
<b>RTK*</b>	2 and 3 way Shut-off & Control valves
<b>STERIFLOW*</b>	Sanitary valves & Regulators
<b>SOMAS*</b>	Ball-Segment valves, Triple offset Butterfly valves
<b>WORLD VALVE*</b>	Lined Butterfly valves

# ABOUT US

We have been operating in New Zealand since 1927 as a supplier and systems integrator of Instrumentation and Control systems. Our extensive portfolio of world-class products and services include many well-known brands, all of which are supported in both the North and South Islands by our Engineering, Service, Sales and Administration teams.

In January 2009, W Arthur Fisher was amalgamated with CSE Uniserve NZ Ltd and the new company renamed CSE W Arthur Fisher. In March 2018 CSE W Arthur Fisher acquired Genesis Communications.

The company was renamed CSE New Zealand, a CSE Global Company. CSE Global, listed on SGX, is a leading global technologies company with an international presence spanning the Americas, Asia-Pacific, Europe, Middle East and Africa.

CSE New Zealand operates the business units of CSE W Arthur Fisher, CSE Genesis and Orionet in New Zealand. We take pride in our ability to deliver cost-effective quality solutions because we believe in nurturing long-term business relationships. A number of our clients have been doing business with us for many years simply because they know that we understand their needs and supply them with tried and tested quality products.

Our ISO9001:2015 certification represents a commitment to ongoing quality improvements and a dedication to our customers to provide:

## Customer Satisfaction, Everytime



# OUR ENGINEERING

## “We Sell, We Support”



Our Service Engineers are fully qualified and trained to provide on or off-site instrument inspection and repair, plant audits, valve and pump repairs/reconditioning.

Whether it is a new design or a system expansion, our Systems Engineering Team offers design, integration, commissioning and training for a wide range of plant automation, telemetry, radios and SCADA applications and can manage all stages of a project to completion using world-leading core technologies to help customers achieve their key project outcomes.

### Our team's key skills and capabilities include:

- ▶ Design, Integration, Commissioning and Training for:
  - Telemetry, RTU's and Radios
  - PLC and SCADA solutions
  - Power System Protection
  - IEC61850 Schemes
  - Ethernet and Serial Communication Networks
  - SQL Database and Reporting
  - Defence in-depth Cyber Security
  - Process and Flow Control
  - Industrial Gas, Liquid and Solids Analysers
- ▶ Modelling and Optimisation
- ▶ Power protection relay selection and application advice
- ▶ Ethernet network equipment selection and application advice, including Serial Servers, Ethernet switches, Routers and SDH multiplexers
- ▶ Soft Starters, KVAR starting
- ▶ LV & MV variable speed drive complete turnkey engineered motor starting solutions
- ▶ Starting and speed control of a slip-ring motor using Slip Energy Recovery technology and Liquid Resistance Starters
- ▶ Complete 'packaged' solutions including motor protection relays, soft starters, variable speed drives, voltage sag mitigation and harmonics solutions
- ▶ Valves, flow and pressure application engineering
- ▶ Analytical sample systems and instrumentation for process and CEM's

At CSE W Arthur Fisher, **Customer Satisfaction, Everytime** is our vision and we can provide pre- and after sales support either on or off-site across a wide range of industries throughout New Zealand and the Pacific.

We are always ready to discuss how we can assist with your Product, Service or Engineering requirements.

### We also offer the following Legacy support:

#### Modicon PLC Hardware:

- 984-38x, 48x, 68x, 78x
- Modicon Micro, Compact, Nano
- S908 and 800 series Remote I/O
- Modbus Plus Networks

#### Software:

- ProWorx Plus (Taylor), Nxt 32
- Modsoft
- PL7, Concept

#### GE Fanuc Hardware:

- 90-70, 90-30, Series 6





# SENSORS



**Innovative Sensors from a Leading Manufacturer:**

- Photoelectric sensors
- Ultrasonic sensors
- Vision sensors
- Wireless networks
- Safety products
- Indoor and Outdoor parking solutions
- Anti-collision radar sensors



**Leading manufacturer of sensors and automation products:**

- Inductive sensors
- Capacitive sensors
- Ultrasonic sensors
- Flow and Pressure sensors
- IS Barriers and Signal conditioners
- Fieldbus I/O
- RFID sensors and controllers
- Cordsets and connectors



# SENSORS

## EUCHNER

More than safety.

Euchner have been developing and producing high-quality products for mechanical engineering and systems engineering for more than 60 years. They specialise in industrial safety engineering covering safety for people, machines and products.

Their safety switches and safety systems monitor safety doors and flaps on machines and installations which help to minimise dangers and risks, thereby reliably protecting people and processes.

They also produce a broad range of products for the man-machine interface and switchgear for automation.

### Safety switches and Safety relays:

- Non-contact safety systems
- Safety switches in metal and plastic housings
- Enabling switches
- Safety relays
- Safety products with Integrated Bus interface



## INOR

### Specialists in Industrial Temperature Measurement

When it comes to measuring accuracy and maximum stability of measurement, INOR set high standards on the market. With 75 years' experience INOR has built up a unique competence in temperature measuring.

INOR is one of the largest manufacturers of industrial signal conditioners and temperature sensors:

- Process Input Isolators
- Signal Conditioners
- Configurable Isolation Transmitters
- RTD/Thermocouple, Process and Potentiometer inputs
- Single & Dual channel
- Unipolar and Bi-polar inputs/outputs



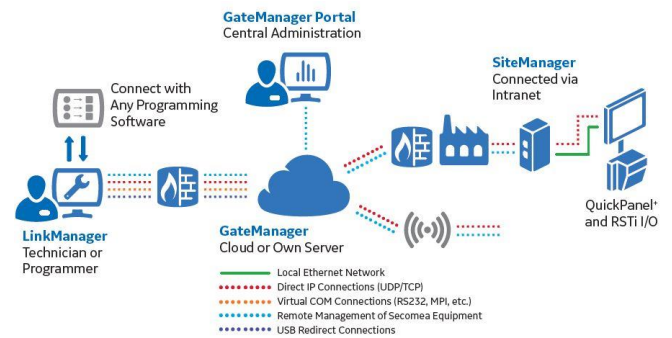
# AUTOMATION & TELEMETRY



**GE's PACSystems Rx3i** – a flexible and high performance control system providing application portability across multiple hardware platforms.

Includes:

- CPE400 – IIoT enabled high performance controller with gigabit interface and cyber secure
- CPE100 – Small footprint controller
- Comprehensive range of CPU's – CPE305, CPE310 and CPE330 for plant wide automation applications
- Versamax Control and I/O
- Profinet Interface
- Redundant Control System
- IIoT Enabled Field Agent



## MODICON



### Programmable Logic Controllers & Automation Products

The entire family of Modicon PLC's offers ingenuity, flexibility and openness for increased productivity of machines & processes:

**Hardware:**

- M340, M580, Quantum, Premium & Momentum
- Connexium Networking products

**Software:**

- Unity, ProWorx32
- Concept, PL7

**Engineering:**

- Upgrade of Legacy 984, Compact and other PLC's
- System integration of new and existing plant/machinery
- Training for both PLC's and Software
- On-site Engineering and Service Support





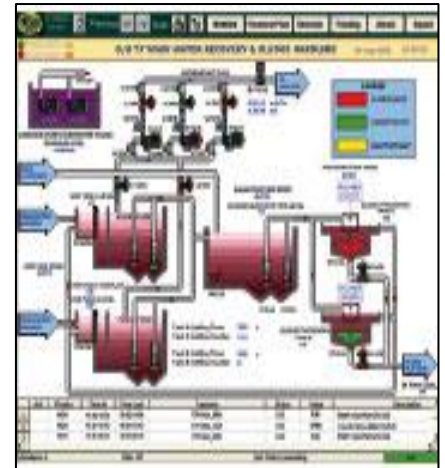
## The Ideal Fieldbus System

- I/O module accommodates 1,2,4,8 or 16 channels
- Fieldbus-independent
- Fieldbus-independent node design easily accommodates new bus standards while retaining the I/O modules
- High-performance
- Intrinsically Safe Ex I/O modules available



We can supply/engineer an HMI and SCADA of your choice (Citect, IFix, Wonderware, Clear SCADA) with our Control System, Telemetry Communication system, Protection and Instrumentation products:

- We also offer comprehensive Measuring systems for dust, filter bagging, flue volume, mercury analysing
- Continuous Emission Monitoring Systems and Data Recording
- Combustion Controls including burner controls, flame sensors and monitoring, valve proving systems and pressure switches
- Video and Thermography Systems



## HMI Operator Panels, Monitors and Control Solutions:

- HMI Operator Panels
- Data Acquisition
- Protocol Converters
- Signal Conditioners
- Sensors for linear and rotary measurement
- Panel Meters



## Cellular RTU

- Rugged industrial design for extreme protection
- Built-in event engine automates remote management
- Multi-carrier support simplifies deployment and reduces cost
- Connectivity options support a variety of application needs
- Secure networking regardless of location





# AUTOMATION & TELEMETRY

## Smart, Secure Point-To Multipoint Radio VHF and UHF Licensed Bands



The Motorola DM4000e Series is a family of ETSI DMR Standards compliant digital radios that delivers operation-critical voice and data communications. Integrated Wi-Fi enables remote software updates. With support for a range legacy analogue & digital network technology, you can keep your organisation connected as it grows. Motorola's application development program ensures an investment in Motorola future proofed for years to come.

### Product summary:

- VHF: 136-174 MHz, UHF Band 1: 403-470 MHz, UHF Band 2: 450-512 MHz
- Power output 1-25W
- Mil spec 810 C, 810 D, 810 E, 810 F, 810 G



The Aprisa SR family provides narrow band point-to-multipoint radio communications, designed and optimised for SCADA and telemetry applications. The Aprisa SR provides up to 19.2 kbit/s capacity for everyday applications, with two Ethernet ports and one serial port.

The Aprisa SR+ provides industry leading capacity of up to 120 kbit/s for more data-intensive applications, with four build-configurable ports for advanced flexibility.

### Aprisa SR Benefits:

- 360 degree security protection, including AES 256 encryption, data authentication and micro-firewall
- Easy configuration and management, with laptop-free install and over the air software upgrades
- Standards-based with SNMP for integration with network management systems
- Reliable and robust for real world utility applications, and easily integrated with current SCADA infrastructure
- Advanced, efficient channel access and traffic management, optimised for SCADA applications



## Trio Licensed Radios

Trio Licensed UHF data radios set a new standard for Telemetry & SCADA data radio, with serial and Ethernet connectivity plus a host of features that make them suitable for complex and demanding requirements in Point-to-Point and Point-to-Multipoint (Multiple Address Radio) systems.

### Summary:

- UHF Frequency Band Coverage (400-518MHz)
- 12.5kHz and 25kHz channel operation in one radio model
- Ethernet/Serial models hardware variants
- Base and hot-swappable standby base station variants
- Compatible with most industry standard data protocols.
- Automatic frequency error compensation for years of service/calibration free operation
- RF Data Rates: Up to 32kbps in a 12.5kHz ETSI Channel & 56kbps in a 25kHz Channel
- ChannelShare+TM: Advanced dynamic supervisory collision avoidance system
- Diagnostics parameters available for Tx Power, RSSI, DV Supply Volts, Frequency Error, Temperature and VSWR





## Kingfisher RTU's

The Kingfisher line provides the industry's strongest platform for RTU telemetry applications:

- Powerful communications supporting over 70 protocols
- Extensive range of modules
- Sequence of Events (SOE) monitoring
- Redundancy
- IEC Programming with ISaGRAF (ToolboxPlus+ software)
- Fail safe output configuration
- Ladder Programming (Toolbox 32 software)
- Cyber Security



## T-BOX RTU's

T-BOX Remote Terminal Units are ideal for decentralised telemetry architectures including remote asset monitoring, process automation and metering:

- Powerful Communications
- Extensive Range of Modules
- IP Telemetry
- Data Logging and Web Server
- Low power, Rugged, Modular, Small Form Factor
- Embedded reporting



## Remote Telemetry and Outstanding RTUs:

- IECeX approved
- 5 real time monitoring sensors
- Software configurable I/O: AI, CI and DI
- Up to 4 passive voltage inputs
- Up to 2 active loop inputs
- Up to 5 digital inputs
- Flexible I/O configuration
- Lithium battery: 5+ years battery life
- Multiple protocols support: DNP3, Modbus, FTP,



# TWO WAY RADIOS



## RADIOS

Keep service levels high with real-time voice and data. Equip your teams with ultra-thin portables and extra-tough mobiles, industry-leading data applications and flawless system scalability.

### Portable Entry Level Business Radios

#### MOTOTRBO DP200e Series

Designed for the everyday worker who needs effective communications. With systems support and loud, clear audio, these next-generation radios deliver cost-effective connectivity to your organisation.

Here's what's new in these next-generation radios:

- Over-the-air programming
- Enhanced audio quality
- Improved expandability
- Better battery life (up to 28 hours)
- Better range (up to 8%)
- Better waterproofing (IP67)



#### MOTOROLA SOLUTIONS CLP 107 TWO WAY RADIO

Comfortable – Lightweight – Portable

Designed specifically for retail, hospitality and restaurant environments. The CLP is small and lightweight with simple Push-to-Talk operation and offers clear, strong, audio communications in noisy environments.

All this performance is packaged in a sleek, contemporary design.



#### MOTOROLA DP400e

The Motorola DP400e series radio has a full set of features and rich functionality in one device, ideal for enterprise solutions such as manufacturing, utilities and transportation industries.

#### Here's what you can expect from your DP4801e Series Portable:

- Unrivalled voice and data communications
- Integrated GPS and Bluetooth data
- Best-in-class audio through intelligent audio
- Available in UHF, VHF and 800mhz
- Colour display and full keypad



**Motorola DP4801 EX ATEX radios** are the choice for professionals in hazardous environments. Whether you are in Oil, gas or other potentially explosive environments, safe and reliable communications are paramount. These radios are ATEX certified for safety and meets the SOLAS Chapter 11-2 regulation

**Motorola DP4801 EX ATEX Radios**

# TWO WAY RADIOS



**MOTOTRBO™**  
Professional Digital Two-Way Radio System

## MOTOROLA DM4000 SERIES

Integrating voice and data effortlessly as well as offering easy to use features along with the ability to deliver operation-critical features such as integrated GPS and Bluetooth.

The Motorola DM4000 series suits all industries from the courier driver traversing the city to roadwork crews. The DM4000 series can improve the way you and your team collaborates together to help you achieve better performance.

Here's what's new in these next generation radios:

- Bluetooth® 4.0
- Indoor location tracking
- Multi-constellation Global Navigation System
- Integrated Wi-Fi®
- Over-the-air software updates



## MOTOTRBO SLR 5500 REPEATER

The MOTOTRBO SLR 5500 Repeater delivers high performance, high reliability two-way radio service with all the features you need to connect your workplace whether you're in the field or on the factory floor.

With its sleek form factor and low power consumption, the MOTOTRBO SLR 5500 is engineered for low cost of ownership.



## MOTOTRBO SLR 1000 REPEATER

Keeping your team connected requires uninterrupted radio coverage. Using the SLR 1000 repeater, you can easily extend the range of your network through dead zones and across remote locations, so everyone's within reach. Deploy the SLR 1000 indoors or out – it's IP65 rated for dust and water protection. The compact size gives you more installation options and a low power, fanless design uses less space and energy.





# TWO WAY RADIOS



## MOTOTRBO PROFESSIONAL SERIES RADIO ACCESSORIES

MOTOTRBO radios are already best in class and to help you work at your best you need enhancements targeted to your specific workplace.

### Features:

- IMPRES Battery Chargers
- IMPRES Audio
- Windporting Technology
- Intelligent Audio
- Operations Critical Wireless

IMPRES chargers tell you exactly how much capacity is in all IMPRES batteries before you attach to your radio and exactly when an IMPRES battery has reached end of life.



## AVIGILON, A Motorola Solutions Company

Avigilon designs, develops, and manufactures video analytics, network video management software and hardware, surveillance cameras, and access control solutions. Avigilon's solutions have been installed at thousands of customer sites, including school campuses, transportation systems, healthcare centres, public venues, critical infrastructure, prisons, factories, casinos, airports, financial institutions and government facilities.



### Trusted security, all in one place

Empower your security teams with powerful technology and software. Avigilon delivers a full range of video surveillance and access control solutions — from servers to cameras to door readers.

Large scale projects face numerous threats such as vandalism or terrorism and can be difficult to protect due to strict installation regulations and tight budgets. They need vast coverage and an easy way to manage security permissions for employees and contractors. Avigilon Access Control Manager means you can manage access to restricted areas from anywhere with a secure internet connection.

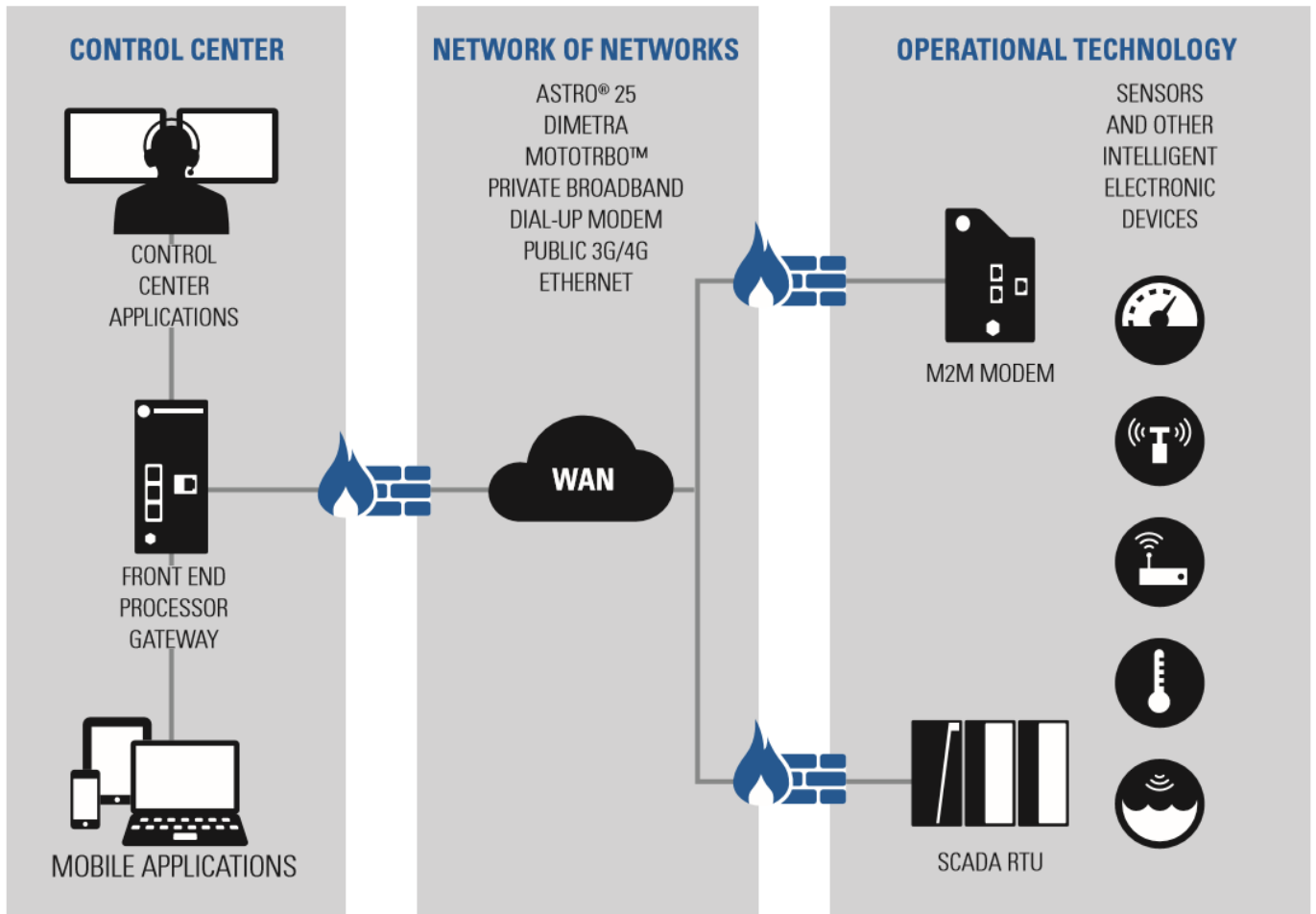
## TRBOnet Plus

### System Overview

Industrial IoT solutions can oversee the continuous monitoring and control of water and wastewater facilities, providing immediate problem detection and resolution.

Well pumping can be automatically adjusted for water quality or energy costs and reservoir volumes and system pressures can be regulated to maximize the efficiency of the delivery system. Operators alerted to line breaks, equipment failures and possible unauthorized water use can react quicker and smarter - all to maintain the highest level of productivity and service quality.

## THE IIoT SYSTEM ARCHITECTURE OVERVIEW



# CONTROL ROOM SOLUTIONS

## TRBOnet Plus

Central co-ordination is the key to an effective workforce. That's why it's so important to have a control room solution in your two-way radio system. You need a solution that builds on traditional dispatch functionality to deliver business-critical tools like:

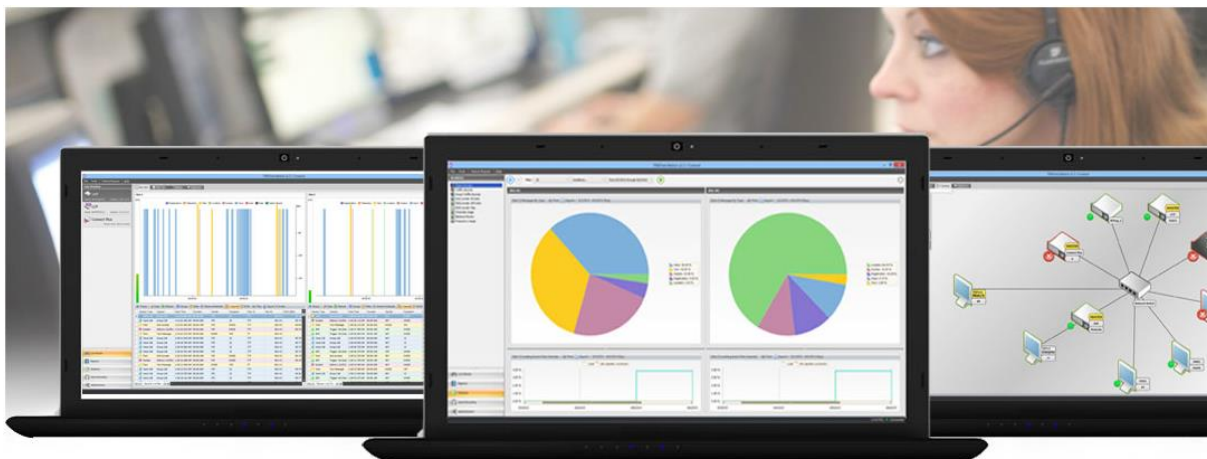
- Alarm and Lone Worker – improve the safety of personnel with automatic alarms and lone worker protection.
- Telemetry – monitor and manage remote equipment from your control room.
- Location Tracking
- Voice Recording
- System Monitoring
- Job Ticketing
- Event Logging
- Voice Dispatch



TRBOnet PLUS is a flexible, customizable solution that gives you exactly what you need to manage your organization reliably, efficiently and cost-effectively.

## Network Monitoring Solutions – TRBOnet Watch

Watch is a client-server application which allows you to monitor a radio network remotely, thus eliminating the necessity for on-site visits and significantly reducing travel costs. With network health alarms TRBOnet™ Watch will ensure your network is fit for purpose when you need it most.



Real-time monitor shows activity on your network. TRBOnet™ Watch is capable of determining what kind of data is transmitted on available channels with the Reports and Analytics module that is designed to visualize gigabytes of information obtained from the radio network.

Advanced filters help you get a clear understanding of system performance. The System Usage report is of interest to those who want to ensure their systems have sufficient capacity for efficient communications.



CERTIFIED EDGE COMPUTING CAPABILITY

## Ursalink – Connect “Things” to the Cloud

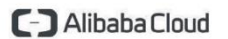
Ursalink offers professional IoT products which simplify the process of data collection, storage and retrieval in order to accomplish the goal: connecting "things" to the Cloud



AWS Greengrass

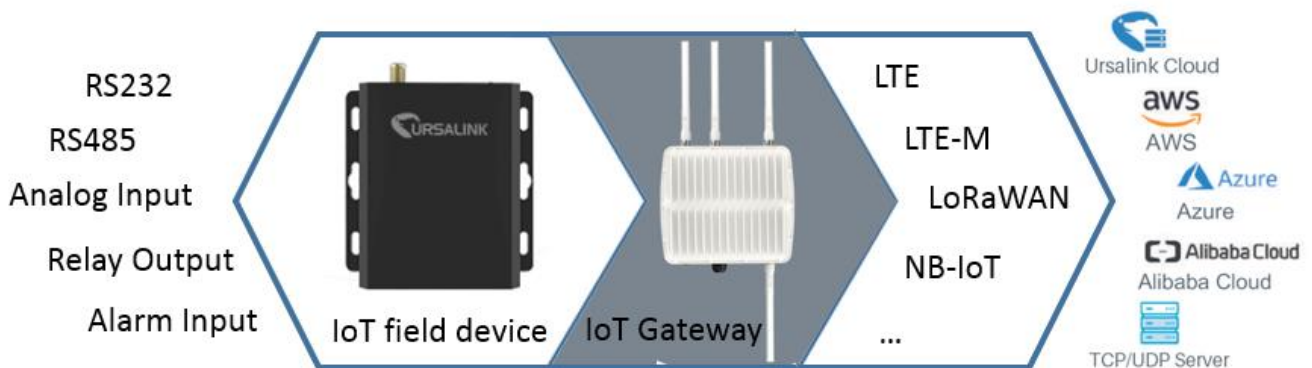


Azure IoT Edge



Link IoT Edge

## Ursalink UC Series & LoRaWAN Gateway



The compact Ursalink UC series is designed for monitoring and controlling field devices, and collecting data to cloud.

- Synchronize configuration from Ursalink Cloud
- Controlled by custom logic formula
- Operate autonomously while network is unavailable

### IIoT Applications:

- **Agriculture**
  - ✓ Smart Irrigation, Reservoirs Level Monitoring
- **Smart Grids & Energy**
  - ✓ Transformer remote condition/power quality monitoring
  - ✓ Overhead Lines remote monitoring
- **Smart City**
  - ✓ Wastewater Management
  - ✓ Smart Lighting
- **Smart Transportation**
  - ✓ Traffic remote Management
  - ✓ Intelligent Public Transportation System
- **Industrial Automation**
  - ✓ Smart Cold Storage
  - ✓ Smart Check weight & Packaging machines



# SUBSTATION PROTECTION & AUTOMATION



## GE Protection Relays:

Multilin 8 Series protective relay platform has been designed for the management, protection and control of distribution feeder, transformer, generator and motor applications.

- Elimination of electrolytic capacitors
- Advanced diagnostics with unique algorithms
- Single set-up and configuration across the platform
- Built-in field swappable power supply and enhanced relay draw-out construction
- Embedded communications offerings including: IEC61850, IEC62439/PRP, Modbus RTU & TCP/IP
- IPC A-610-E Class 3 Manufacturing standards – highest industry standards for electronic manufacturing
- **10 year warranty**



## GE Kelman & Hydran Transformer Oil (DGA) Monitoring:

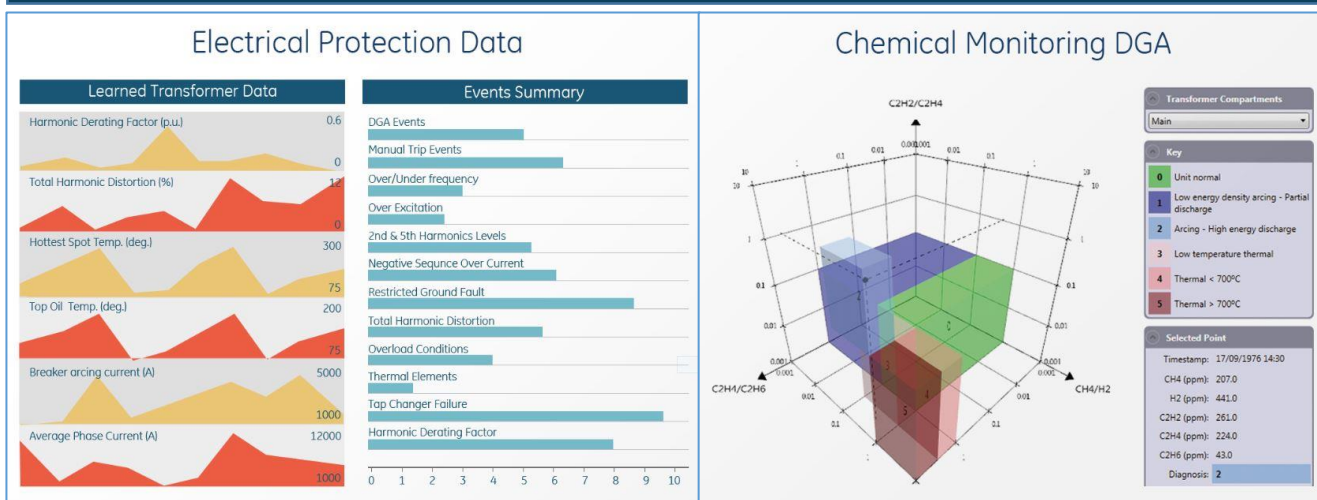
- Critical asset protection and performance
- No calibration needed
- Portable or permanently installed (single or multiple transformers)
- Early fault detection and life extension of transformers
- Photo-Acoustic Spectroscopy (PAS)
- 8 Gases + Moisture analysis
- **5 year warranty**



## A complete Transformer Electrical/Chemical protection and Monitoring Solution:

The Multilin 845 is the first Protection Relay in the industry which correlates both Electrical Protection Data with Chemical DGA results to provide advanced transformer health monitoring and diagnostics.

### Multilin 845 Transformer Health Report





## Ruggedcom Multi-Service Platform

### Substation Hardened Ethernet IP equipment:

- Layer 2 & Layer 3 Technology
- IOT Enabled Edge Routers
- Cyber Security enabled
- KEMA certified
- IEC61850 compliant and Smart Grid enabled
- 5 year warranty
- Substation Hardened Routers, Ethernet Switches, Serial Servers, Media Converters



### Cybersecurity

CrossBow™ Cybersecurity is a proven Secure Access Management Solution designed to provide utilities NERC CIP compliant, remote access, maintenance and data retrieval to Intelligent Electronic Devices (IEDs).



### Ethernet Switches:

Red Lion's new N-Tron and Sixnet series industrial Ethernet switches are designed to meet diverse networking environments. Built-in redundancy coupled with robust reliability ensures infrastructures stay up and running around the clock. Red Lion provides uptime anywhere to enable you to get the most out of your network.

- Managed and Unmanaged Ethernet Switches
- Monitored Ethernet Switches and Routers
- IIOT Enabled Devices
- PoE Solutions
- Ultra-Rugged IP67 Switches





## BLACKBOX G4K Fixed Power and Portable Quality Analyser

- Continuous Waveform Recordings for more than a year.
- Superior accuracy (far surpassing IEC61000-4-30 Class A requirements).
- Standard Compliance Testing (PQ parameters follow EN50160 and IEC61000-4-30).
- Remote monitoring capabilities (connect via TCP/IP/RTU/GPRS wireless).
- No missed events.
- Quick and simple setup.
- Remote connectivity (built-in web server with a 802.11 access point and ethernet b/g).
- Unique features including: Real-Time Data analysis, export compatibility, automated report generator, automatic notifications, multiple device synchronisation.



## PQube®3 - Power Quality, Energy & Environment Monitoring

- Embedded Power Quality, Energy & Environment Monitor IEC 61000-4-30 Ed.3
- Class A Power Quality Analyser
- Ultra-accurate Revenue Grade
- Class 0.2 Energy Meter
- Additional AC/DC channels
- Environment Sensor Recorder
- World's smallest and most advanced MicroPMU



## GE Multilin - Digital Power Metering: PQMII

- Power quality metering with waveform capture and historical data logging.
- Easy to use software with communication functionality.
- Used for applications of Low and Medium Voltage metering, power factor control and demand management.
- Power quality analysis and harmonics monitoring capability.





## Machinery Protection & Condition Monitoring System

### Key Features:

- Full API 670 compliance
- Totally open data access
- Native to OSIsoft – PI historian
- 19" rack or bulkhead mounting
- Up to 56 channels
- On-board flight recorder mode with 32GB SD card and 32GB solid state HDD as default option
- Multiple, segregated processors
- Can be retrofitted to replace existing system
- IIoT and EIoT Enabled Solution

### Applications:

- Gas, Steam and Hydro Turbines
- Generators, other Rotating Machineries
- Reciprocating and Radial Compressors
- Balance of Plant – Pumps/Fans/Others

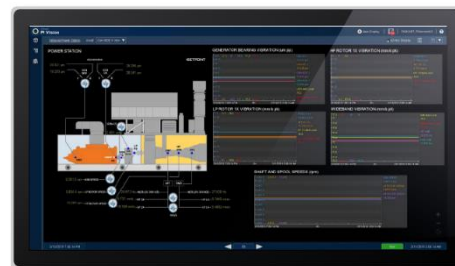


No servers.  
No networks.  
No hassles.

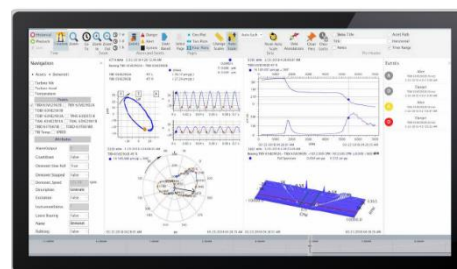
All diagnostic data available when needed and viewed with free CMS Client.



PI Process Book  
PI AF Client



SETPOINT®  
CMS Clients







Brüel & Kjær Vibro

## Vibration Sensors – METRIX & BK Vibro Range of Sensors:

### Digital Proximity Probe System (DPS):

- Fully programmable – Digital – API 670 compliant
- Single programmable proximity probe can be configured with any probe/cable/target-material combination
- Field calibration
- One driver for all applications
- Interchangeable with other manufacturers' probes, Vibration sensors, Seismic sensors and Vibration Signal Conditioners



### Accelerometers

### Velocity Sensors & 4-20mA Transmitters



### Proximity Probes (Optical & Eddy Current)

- The Metrix DPS is compatible with 5mm, 8mm and 11mm proximity probe systems, Metrix MX8030, MX2030, 7200 and 3000 Series Probes, other major manufacturers probe and cable systems
- Easily configure a custom DPS with unknown shaft material, variable system lengths up to 12 metres, with various manufacturer 5mm, 8mm and 11mm probe types



### Air Gap and Magnetic Flux Sensors

### Impact Transmitters for Reciprocating machines

Signal Conditioners – designed to accept an input from a Seismic sensor and Convert To 4-20mA



### Mechanical & Electronic Vibration Switches



## Wireless Vibration and Temperature Monitoring

Vibration monitoring and predictive maintenance made easy with the full solution from Banner.

- Detect problems earlier
- Predict failures
- Reduce down time



### Easy installation of Wireless Remote Monitoring.

#### Monitor temperature and vibration with the QM42VT sensor:

- Mount to motors, compressors, fans and pumps with a variety of options
- Set vibration parameters according to ISO 10816 Vibration Severity Chart
- Set a temperature threshold up to 80°C
- Provides local indication, sends signal to a central location and collects data via the Gateway.



## Foxboro®

by Schneider Electric

### Measurement Instruments:

#### Pressure

- Absolute; Differential; Gauge; High turndown & Multivariable transmitters; Manifolds; Block & Bleed Valves; Orifice assemblies; Remote diaphragm seals

#### Flow

- Coriolis (mass-flow); Magnetic; Vortex

#### Level

- Liquid level; Interface and density; Guided wave radar; Free space radar

#### Valve Positioners

- Universal; Intelligent/HART; Analogue; Electro-pneumatic; Pneumatic; Current to Pneumatic converter; Attachment kits to all actuators

#### Liquid Analytical

- Conductivity; Dissolved oxygen; pH and ORP

#### Temperature

- Sensors and Thermowells; Transmitters



## DURAG

### Innovative Solutions for Combustion and Environment

#### Combustion Controls:

- Burner controls
- Flame Sensors
- Valve Proving System
- Video and Thermography Systems

#### Pilot Burners & Burner Products:

- DURAG/SMITSVONK Spark Ignition Systems
- HEGWEIN Gas Fired, Dual-Oil & Oil/Gas Igniters
- SMITSVONK/HEGWEIN Gas Fired Igniters and Burners

#### Environmental: (DURAG/GRIMM)

- Dust & Filter Monitoring
- Opacity Measurement
- Data Management
- Tunnel Sensors
- Indoor Air Quality Monitors
- Nano-particle Measurement Systems





## Water Quality Monitoring

Portable multi-parameter water quality analysers:

- Measurement display of pH, ORP, DO plus others
- Data logging capability and GPS options:
  - ▶ U-50 up to 11 parameters

Industrial water quality analyser - H-1 series:

- Individual measurement of: pH; ORP; DO; Resistivity; Conductivity; Residual Chlorine; Turbidity



## Oil Content in Water

Accurate measurement of oil in process water and site run-off:

- Laboratory/Batch Model OCMA-500

## Gas Analysis

Flue-stack gas analysis of boilers and furnaces (CEMS):

- Single analysers accurately measure up to five gases ( $\text{NO}_x$ ,  $\text{SO}_2$ , CO,  $\text{CO}_2$  and  $\text{O}_2$ ).
- PG-300 portable system
- ENDA-5000 fixed installed system



## World Leaders in Oxygen Probes & Analysers:

Oxygen Transmitters with single, dual and heated probes for use in:

- Package Boilers, Power Generation, Black Liquor Recovery
- Aluminium, Iron & Steel Furnaces, Coke Ovens, Soaking Pits and Pot Lines.
- Incinerators for Toxic & Medical Waste
- Rotary Kilns for Lime, Cement and Ceramics
- Food Packaging, Nitrogen Purity, Oxygen Enrichment



Water Vapour Analysers for processes such as:

- Drying ovens
- Baking ovens
- Timber drying kilns
- Gypsum and Plasterboard dryers



Oxygen and Carbon Dioxide Analysers:

- Portable
- Bench Top

Dewpoint Transmitter for continuous monitoring of Oxygen in Hydrogen/Nitrogen

# INSTRUMENTS



## Industrial Process Gas, Oxygen and Liquid Analysers:

- Trace Oxygen Analysers
- Percent Oxygen Analysers
- Area Monitors
- Portable Oxygen Analysers

## Combustion and Emission Analysers

### Specialist Applications and Sensing Technologies:

- Total Sulphur
- Ambient LEL (Lower Explosion Limit)
- Thermal Conductivity Analyser for Hydrogen, Argon, Nitrogen etc.
- Flame Ionisation Detectors for Total Trace Hydrocarbon And Hydrocarbons in Water
- Moisture, Portable and Online
- Turnable Diode Laser Absorption Spectroscopy (TDLAS)



## NIR Moisture Sensors for measurement and control in both production line and laboratory models:

- Non-contact, instantaneous, repeatable and accurate measurement
- Low installation cost and quick payback
- World leaders in IR & RF Technology with over 30 years experience



### Moisture Applications: (unless stated otherwise)

**Animal Food:** Bone & Meat Meal, Fish Meal, Cornmeal, Pet Foods

**Chemical:** Bauxite, Fertilizer, Plastic Powder and Pellets, Soap Powder and Flakes

**Food:** Bakery Dough, Breadcrumb, Cereal, Coffee/Tea, Cookie Dough, Flour, Grain

**Mineral:** Cement, Chalk, Limestone, Fly Ash, Sand, Perlite, Furnace Slag

**Paper:** Paper/Cardboard, Paper Pulp, Thickness of coatings, Thickness of wax films

**Building/Wood Products:** Bark, Gypsum Board, Fibreboards, Plywood, Sawdust, Woodchip





## Fairchild

### Pressure Regulators, Volume Boosters, Transducers and Pneumatic Relays:

- Precision regulators
- Back pressure and miniature regulators
- High flow and fast response volume booster
- Electro-pneumatic transducers for I to P and P to I applications
- Explosion-proof I/P transducers
- High performance electronic transducers



### A range of gas detection systems for the safe area monitoring of process areas and plant rooms.

- Flammable gases (L.E.L. as % vol) for gas-fired boiler rooms.
- Toxic gases such as ammonia and other refrigerants in cool stores and blast freezer plant rooms.
- Oxygen and Nitrogen monitoring in modified atmospheric packaging areas.



### Positive displacement flow meters and transmitters:

- Fuel & Oil Flow Meters
- Industrial Flow Meters
- Solvent Flow Meters
- Corrosive Flow Meters
- Remote and Integral mounted display and pulse outputs.



**CSE-WAF V972 & V202S Saniflow and Geeral Service Control Valves for accurate control of constant liquid level, pressure or temperature, ease of cleaning and low maintenance. Ideal for Food and Beverage Industries:**

- Equal Percentage, Linear or On/Off characteristics available.
- Industry proven pneumatic diaphragm actuators and positioners.
- Accessories for signal conversion, positioning and feedback.
- Peek guide bush as standard, ensuring long-life and reliability from its superior wear characteristics.
- Valves assembled in-house, often available overnight or within a few days after ordering.
- Spares available ex-stock – no need to wait days or weeks for expensive parts from overseas.

### **V972 Saniflow Control Valve:**

- High quality 316 stainless steel sanitary valve body made in New Zealand with Triclover, RJT or butt weld connections.
- Port sizes from 25mm through to 75mm with Cv's from 8 through to 197 (fractional Cv's available).
- Optional construction for 50 bar pressure application.

### **V202S General Service Control Valve:**

- 316 stainless steel valve body with BSP screwed connections; rated to 200 psi 13.8 bar/1000Kpa (150psi) saturated steam.
- Sizes: 15mm to 50mm; Cv's 8 to 48 (reduced CV's available).

Made in NZ



Made in Germany

### **RTK 2 & 3 Way Shut-off, Control and Heavy Duty Valves:**

- Sizes: ½ to 16". Pressure class from ANSI 150 to 1500.
- End connections in DIN and ANSI standards.
- Balanced Trim and Multi Stage Trims available
- Integrated Silencer (for noise attenuation and outlet velocity reduction)
- Continuous Blow Down Valve PN63 – 160
- Bottom Blow Down Valves PN63 – 160
- Electrically and pneumatically actuated.

**Standard spare parts can be shipped ex-factory within 1 to 2 weeks & complete (standard) valves within 4 – 6 weeks.**



# VALVES & ACTUATORS



Made in USA

## Sanitary Valves:

- **Pressure Reducing & Back Pressure Reducing Regulators:** 2-135 psi Setpoint Spring Ranges. Automated Regulators available for remotely changing the Setpoints.
- **Ball Valves:** PTFE Cavity Filler Seats, 2-way and 3-way, Manual and Automation packages available.
- **Vertical and Horizontal Check Valves:** No spring, hinge, mechanical return mechanism or wet guided stem, Crevice free (no areas for entrapment).
- **Steam Traps:** for Validated Clean Steam Systems and Large Vessels. Higher capacity SIP applications.
- **Sight Glasses:** 240° Process Viewing Area through Toughened Borosilicate viewing glass with optional Polycarbonate Shield for accidental damage.



## High Performance Ball Valves:

- PED Category I available
- API 607 4th edition, fire tested
- Anti-static construction
- Available in a wide range of materials
- Wide range of end connections
- For applications with pressures to 275 bar, temperatures to 315°C



## Industrial Self-Operating Regulators:

- Pressure Reducing/Back Pressure/Bypass
- Gas and Tank Blanketing

## Fractional Flow Control Valves for Precise Control:

- Cv's (Kv's): 0.00001 to 4 (0.000009 to 3.4)
- Quick Change Trim Standard on Cv 0.05 and over.
- Guided Trim Standard.
- Inlet pressures upto 827 bar
- Bellow Stem Seal, Extended Bonnet, Double Packing, and other arrangements available on request.
- Materials: Carbon Steel & Stainless Steel (NACE Certified Variant), Alloy 20, Hastelloy B & C, Titanium, Monel and other upon request.
- Application: Pilot Plant, Test Standards, R&D Facilities, Specialised Processing Plants (Dosing, Injection and Venting).



## CRANE

**Cast Steel Gate, Globe and Check Valves** for steam, air, gas, oil and high pressure service:

- Gate valves with flexible wedge and welded-in seat rings
- Globe valve with swivel type plug (disc) design and welded-in seats
- Check valve with swing type disc design and welded-in seats
- Valves comply with applicable requirements of the following **standards**- API594, API600, API623, API624, API598, ASME B16.34, ASME B16.10, ASME B16.5, ASME B16.25.
- **Fugitive Emissions:** CRANE is a strong advocate for cleaner environment and serves as an industry leader in reducing fugitive emissions. Fugitive Emissions occur from spills, lead and evaporation. CRANE is proud to offer fully compliant and tested valves as per API624 as a standard offering.

**Sizes up to 12" and pressure class 150 and 300 in Trim 5 (NACE Compliant) & Trim 8 – available ex-stock Auckland. Larger sizes and higher pressure classes available ex-stock Australia.**



## CRANE

### ChemPharma Flow Solutions

**Valve solutions for the Chemical and Pharmaceutical Industry:**

#### XOMOX:

- Lined, Sleeved and Jacketed Valves
- 2-way, 3-WAY (L & T Ports) and 4-way Plug Valves

#### Resistoflex:

- PTFE, PVDF, PFA lined spools and fittings
- Complies with ASTM F1545 specification for plastic-lined pipe, fittings and flanges
- Includes high/low temperature aging, steam/cold water temperature cycling and vacuum testing
- All finished lined piping components are electrostatically tested at 18KV

#### W.T.A.:

- Bellows Sealed Globe Valves
- Bellows made of Hastelloy C276 to protect against corrosion and achieve zero leakage
- Safety gland packing to prevent ingress of water
- WTA is a certified supplier and a member of Technical Correspondents of the Euro Chlor organization.
- WTA valves are manufactured in compliance with Euro Chlor GEST specification and chlorine Institute Pamphlet 6.





# VALVES & ACTUATORS



Made in Sweden

**SOMAS Instrument AB, design, manufacture and market, control and isolation valves from high-grade alloys and stainless steel:**

### Ball Segment Valves

Low Noise Trim for preventing Flashing & Cavitation  
High Consistency Applications for Pulp & Paper Industry  
Backlash Free Torque Transmission



### Butterfly Valves

Advance Triple Offset Design

### Ball and Check Valves

Wafer Check valve: Short closing time. Easy maintenance.  
Flanged Ball valve: Spring loaded seats for tight shut-off at low differential pressure.  
3-piece Ball valve: With ISO connection for actuator mounting, threaded ends, weld-ends or flanged.

**Valves available for both Cryogenic Services with temperatures down to -196°C and applications with temperatures up to 550°C.**



**COPES-VULCAN**  
AN SPX BRAND

### Copes-Vulcan General Service & Severe Service Control Valves:

- Sizes: 3/4" – 20" (20 – 500mm). Pressure Classes 150 through 4500 standard. Larger sizes as required.
- Extensive array of standardised trims to meet virtually any service requirement.  
Raven™, HUSH™, Tandem and GAD™ high-performance trims are available and can be used to control occurrences of cavitation, flashing or noise.
- Quick change trim designed to ensure ease of maintenance and are fully interchangeable between like-sizes to ensure maximum flexibility and reduced inventory requirements.
- A complete range of 700 series and 1000 series pneumatic diaphragm actuators will meet practically any service including both nuclear and seismic requirements.



### Copes-Vulcan De-superheater:

- Mechanical Atomising (Model MA) with up to 3.3:1 Turndown
- Spring Assisted Multi-Nozzle (Model SAMN) with up to 9:1 Turndown
- Variable Annulus (Model VA) with up to 15:1 Turndown
- Steam Atomising (Model SA) with up to 25:1 Turndown
- Multiple Nozzle Spray (Model MNSD) with up to 75:1 Turndown
- Variable Orifice (Model VO) with up to 100:1 Turndown
- Combined Pressure Reducing and De-Superheating Station (Model PRDS) with up to 50:1 Turndown





## Ex-Stock, Manually Operated Valves for Isolation Services

- **Valve Types** - Gate, Globe & Check (NRV) Valves
- **Size Range** - 50-150mm (2"-6")
- **Body Material** - A216 WCB Cast Steel
- **Flanged** - RF ANSI Class 150 & 300
- **Industry Standards:**
  - ASME B16.34 Pressure/Temperature Rating
  - ASME B16.5 Flange Dimensions
  - ASME B16.10 Face to Face Dimensions
  - API 598 Testing



## Manually Operated Valves for Isolation Services (short lead time)

- **Valve Types/Size Range:**
  - Gate - 15-600mm
  - Ball - 8-300mm
  - Butterfly - 50-1200mm
  - Globe - 15-300mm
  - Check (NRV) - 8-600mm
  - Knife Gates - 50-600mm
- **Body Materials** - Cast Iron, Cast Steel, 316 Stainless Steel
- **Pressure Rating** - Class 150 to 1500
- **Connections** - Flange, Lugged, Wafer, BSP, NPT, SW
- **Flange Drillings** - ANSI & AS2129
- **Actuators** - Hand-wheel/lever, Gear Operator



# VALVES & ACTUATORS



Made in Australia

## DELATITE Zero Leakage – Metal Seated Isolation (Ball) Valves for High Pressure and High Temperature Applications:

- 5 Basic models covering sizes from 12mm to 650mm, larger sizes available upon request.
- Pressure Ratings from ANSI Class 150 to 3200. Higher rating available upon request.
- Tight Shut-off to SPP.061 for Block Valves (seats are out of the flow path).
- Hard Coating (LLK1906-Chrome carbide, Ultra Fine) on Ball & Seats, additional coatings available on request. Body & Ball internals can also be coated on request.
- All valves have a unique serial number and are fully traceable. Document package with each valve including Test Certs., CMTR's, B.O.M. & I.O.M.



## Cyl Knife Gate Valves

Uni-directional and Bi-directional for isolation services in Water & Waste Water, Mining, Pulp & Paper, Marine, Bulk Storage and Vacuum Pump Systems:

- Sizes: DN50 – 1800
- Body Material in Cast Iron, Ductile Iron & Stainless Steel, other high alloy materials available on request (DUPLEX2205, Hastelloy & SMO254)
- Flanges ratings: PN10 – 250 and ANSI B16.5 (others on request)
- Automated packages available
- Standard lead time ex-factory – 2 to 3 weeks

Made in Spain



Made in The Netherlands

## World-Valve Butterfly Valves for isolation and modulating control services:

- Sizes from DN50 – DN2000 in Wafer, Lugged and Flanged Style.
- Flange connections to AS2129, ASME B16.5, EN1092, JIS.
- Rubber lined body (fully vulcanized) in NBR, EPDM, FPM, VSI, PU and others available on request.
- Metal seat options available in 316SS and Inconel.
- Complete range of actuators and accessories available for automation.
- **Available ex-stock** in sizes DN80 – DN300, ANSI Class 150 and AS2129 Table E Connections, DI Body, SS Disc and Shaft, EPDM liner, together with options of actuators and accessories.
- Larger sizes available in short lead times.





## BIRKETT: SAFETY RELIEF VALVES

- Full Nozzle, Full Lift
- Spring loaded safety relief valves
- API/ASME pilot operated
- Thermal relief valves – protects pressurised systems from the effects of exceeding design pressure limits.
- Wide range of materials available
- Worldwide Certification
- Birkett's products carry a wide range of approvals and comply with the most stringent international standards and customer specifications, including CE marking to the European Pressure Equipment Directive, ATEX 94/9/EC, ISO 9001:2008, ASME VIII, GOST-R, API, NACE, STOOMWEZEN, AS1271, BS6759, ISO 4126, ABS, and the Chinese Safety Quality License.



## AMAL: COMBINATION FLAME ARRESTER/RELIEF VALVE

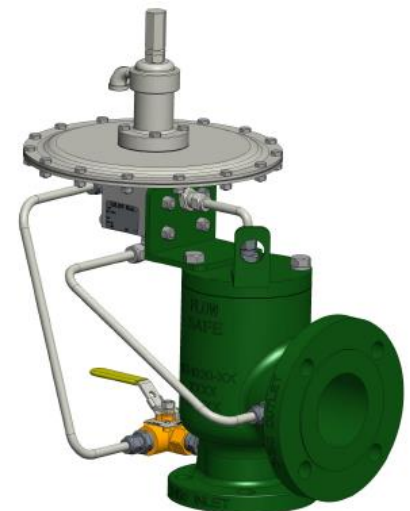
- Detonation (Unstable): For flames with supersonic speeds and shock wave.
- Deflagration: For flames with sub-sonic speeds.
- Range available for gases, vapours and liquids.
- Amal make Flame Arresters that work for all gas groups in the process industry, to EN12874 as well as B, C and D to US National Electrical Code Article 500, because anything less could be disastrous!



Made in USA

## High Performance Safety Relief Valves

- For Air/Gas and Liquid services to ASME Section VIII, Div. 1
- Guaranteed bubble tight shut-off to 98% on the majority of valves
- Only SRV manufacturer to offer a standard 3 year limited warranty
- Flow care service protection plan via product registration
- Snap-acting or Balanced, Spring-Operated Liquid and Gas Service Safety Relief Valves (15-15,500psig)
- Snap-acting or Modulating/Balanced Pilot-Operated Safety Relief Valves (15-6000psig)
- Unloader Valves (5-285psig)
- Vacuum Relief Valves (0.2-14.6psi vacuum)
- Liquid Surge Relief Valves (up to 3705psig)
- Marine Relief Valves
- Cryogenic Service Safety Relief Valves (Pilot/Spring Operated)





# VALVES & ACTUATORS



Made in Holland

## Customised Valve Solutions:

- Ball, Globe, Gate, Check, Double Block & Bleed, Cryogenic valves.
- Valves, designed, calculated, produced and tested according to customer's requirements.
- Sizes range from 0.25" up to 16"/DN 6 to DN400
- Pressure ratings up to class 4500/10.000 PSI/PN400
- End connections: Flanged, BW, SW, THR, HUB, PE
- Options include: Extended stem, various coatings on ball and seats, various seat materials, various trims, single or double piston design
- Operator: Lever, gear, bare stem, actuator

## Industry focus:

- Petrochemical
- Oil sands
- Chemical
- Power
- Fertiliser Plants
- Oil & Gas
- LNG
- Desalination
- Mining
- PTA plants



Made in UK

## Advanced & Customised Butterfly Valve Solutions for Severe Service Applications:

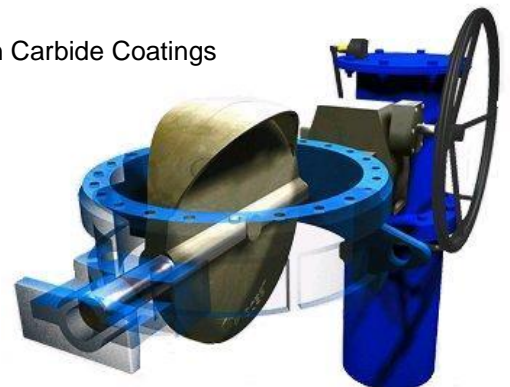
- Pressure ranges from ANSI 150# to 2500#
- Temperature ranges from cryogenic -196°C to 1200°C
- Range is so diverse that the use of exotic materials is routine.

## Valve types include:

- Cryogenic
- Three Ports
- Rubber Seated
- Refractory Lined
- Composite Seals
- Eccentric & Concentric
- Nitride/HVOF Coatings
- Contoured/"Z" Matic Disc
- Teflon® Lined (PTFE, Halar®)
- Epoxy/Nylon/Rilsan Coatings
- Metal Seated Swing Through
- Metal-to-metal Step Seats
- Cryogenic Extensions (Bonnets)
- Low Noise & Anti Cavitation (Low dB)
- High Performance, Double & Triple Offset

## Customised service offers:

- Custom made Face-to-Face dimensions
- Inspection Hatches
- Live Loaded Glands (TA Luft)
- Outboard Bearings
- Purge Connections
- Steam Jackets
- Stellite/Tungsten Carbide Coatings



# VALVES & ACTUATORS



Made in Germany

## The Specialist of Electric Actuators

### Multi (SA & SAR) / Part-turn (SQ & SQR) & Linear Electric Actuators:

- Torque range from 10 Nm to 675,000 Nm
- Thrust range from 2 kN to 217 kN
- Simple **(AM)** or Microprocessor-based **(AC)** Controls with Display for Local Control and Operations
- Variable speed actuators for On/Off, Inching & Modulating applications
- Combination with gearboxes for higher torque requirements
- Explosion proof IECEx de IIC/IIB T4 or T3, IECEx d IIC/IIB T4 or T3
- Enclosure protection IP68 in compliance with EN 60529 (8m head of water for max. 96 hours)
- Functional Safety – Specially developed SIL module for SIL2 and SIL3 applications
- Also available Variable Speed Actuators with positioning accuracy of < 0.2%



### Multi / Part-turn Gearboxes:

(For use in combination with Multi-turn Actuators and Manually Operated Valves)

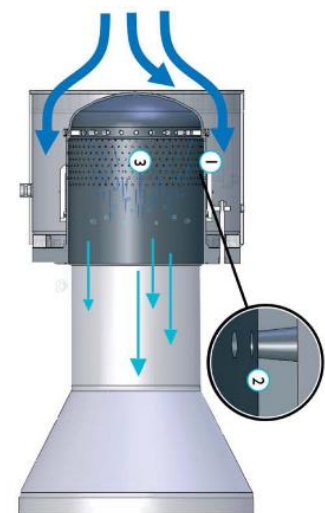
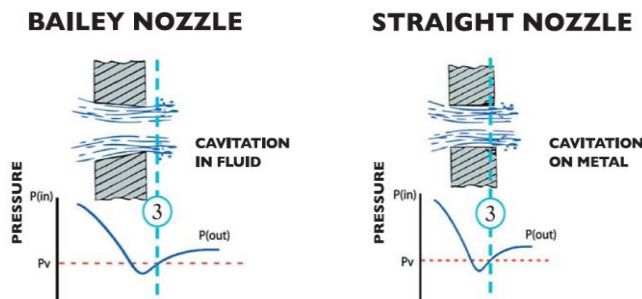
- Bevel, Worm, Spur and Planetary Gearing for providing torques up to 675,000 Nm
- Lifetime operation requirement acc. to EN 15714-2



Made in USA

## Sleeve Valves for High Energy Dissipation

What makes the Bailey Valve Superior- Control of cavitation through the valve; by moving the cavitation away from the exit of the nozzle, turbulence in the nozzle is reduced and it will therefore increase the efficiency and reduce the vibrational effects experienced in standard straight through drilling.



### Models-

- B-5: 3" – 12" Inline Y-Pattern valve with flanged inlet/outlet
- B-10: 8" – 72" Inline valve with flanged inlet/outlet
- B-11: 8" – 72" Submerged discharge valve with flanged Inlet
- B-12: 8" – 66" 90 degree valve with flanged inlet/outlet
- B-14: 8" – 72" Open or submerged discharge valve flanged inlet
- B-16: 3" – 72" Fixed orifice valve with flange



# MOTORS, SOFT STARTERS, VSDs



## Medium Voltage Motors:

- 3.3kV, 6.6kV, 11kV
- Squirrel Cage & Slipring Induction Motors:
  - TEWAC – Totally Enclosed Water to Air Cooled
  - TEAAC – Totally Enclosed Air to Air Cooled
- Cost effective replacement of Siemens' old motors
- Special designs to suit specific applications, including:
  - Filter & Heat exchanger in the slipring chamber
  - Water leak detector



## Low & Medium Voltage Softstarters:

- 400V, 690V, 1000V, 3.3kV, 6.6kV, 11kV & 15kV
- Up to 26,000 kW
- Low Voltage test
- Pump & Special load control
- Direct Power factor connection
- Comprehensive motor protection
- Multi-motor starting
- Synchronous motor starting



## Equalizer ST:

The ultimate real-time, dynamic, reactive power compensation system for medium and low voltage motor start-ups:

- Cost-effective fast reactive power compensation
- Improves the overall power quality of the electrical network
- Designed to limit voltage drop to local standards
- Process input isolators
- Signal conditioners
- Configurable isolation transmitters
- RTS/Thermocouple, Process and Potentiometer inputs
- Single & Dual channel
- Unipolar and Bi-polar inputs/outputs



## Our Markets



### Water

We supply over 10 major Water/Waste Water utilities throughout New Zealand with:

- Kingfisher telemetry
- Modicon PLC's
- Turck/Banner Sensors
- Valves
- GE Multilin Power Monitoring
- Motorola Voice & SCADA Solutions



### Processing Industry

Kingfisher telemetry, Modicon PLC's, SCADA, RuggedCom, Ethernet IP Routers, Switches and Serial Servers. GE Multilin Protection Relays, Power Monitoring, Electric Motors, Valves and Instrumentation and Motorola Voice & SCADA Solutions supplied to:

- Dairy Industry
- Timber Industry
- Heavy Industry
- Pulp & Paper Mills



### Renewable Energy

Wind and Geothermal:

- GE Multilin Protection relays with IEC61850 Station and Process Bus
- GE RuggedCom Ethernet IP Routers
- Kingfisher Telemetry
- SCADA, Cyber Security
- Switches and Serial servers
- Valves



### Oil & Gas

On/Off Shore Oil & Gas Production Platforms, Gas Transmission and Custody Transfer, Oil & Gas processing plants:

- GE Multilin Motor Management Relays
- Cyber Security
- Hyundai Medium Voltage Motors
- In-Line Volume Correctors
- Kingfisher Telemetry
- Modicon PLC's
- Omni Flow Computers
- Softstarters
- SCADA
- Turck/Banner Sensors
- Valves
- Motorola Voice & SCADA Solutions
- ATEX Radio
- Man Down Solutions



### Power and Energy

We supply the Generation, Transmission and Distribution industries with:

- Cyber Security
- Ethernet IP Routers
- GE Hydran and Kelman Transformer DGA
- GE Multilin Protection Relays with IEC6 1850 Station & Process Bus
- GE RuggedCom
- Modicon PLC's
- SCADA
- Switches and Serial servers
- Valves
- Motorola Voice and SCADA Solutions
- Control Room Solutions



### Mineral & Mineral Processing

We supply Gold and Coal mining industries with:

- GE Multilin Protection relays and power monitoring
- Kingfisher Telemetry
- LRS, SER Drives
- Medium Voltage motors
- Modicon PLC's
- RuggedCom Ethernet IP Routers
- SCADA
- Switches and Serial Servers
- Valves
- Motorola Voice and SCADA Solutions



## Our Markets



### Communications

We supply Kingfisher telemetry, GE RuggedCom IP, Radios and Engineered Solutions to:

- Power Utilities
- Railways
- Refineries
- Tunnels



### Agriculture & Irrigation

- HMI
- Instrumentation & Sensors
- Medium Voltage Motors
- Kingfisher Telemetry
- PLC Control Systems
- Starters
- VSD's
- Valves



### Transportation

- Cyber Security
- GE RuggedCom Ethernet IP Routers
- Kingfisher Telemetry
- SCADA
- Switches and Serial Servers
- Motorola DMR & TETRA Communications Networks
- Control Room Solutions



### Emergency Services



### Aviation



### Port Operations

We supply critical communications infrastructure, hardware, and control room solutions to a number of Emergency Services, Aviation and Port Operations throughout New Zealand.

Our Commercial Radio Market customers include:

- Healthcare
- Security
- Transport
- Logistics
- Retail
- Hospitality
- Construction & Construction Services

# Our Offices

## CSE New Zealand

### Managing Director

Harry Singh  
harrys@cse-waf.nz

### Auckland

15 Polaris Place  
East Tamaki, Auckland

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