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Self-powered wireless instrumentation

Accutech rapid-deploy wireless instrumentation solutions for telemetry and remote SCADA
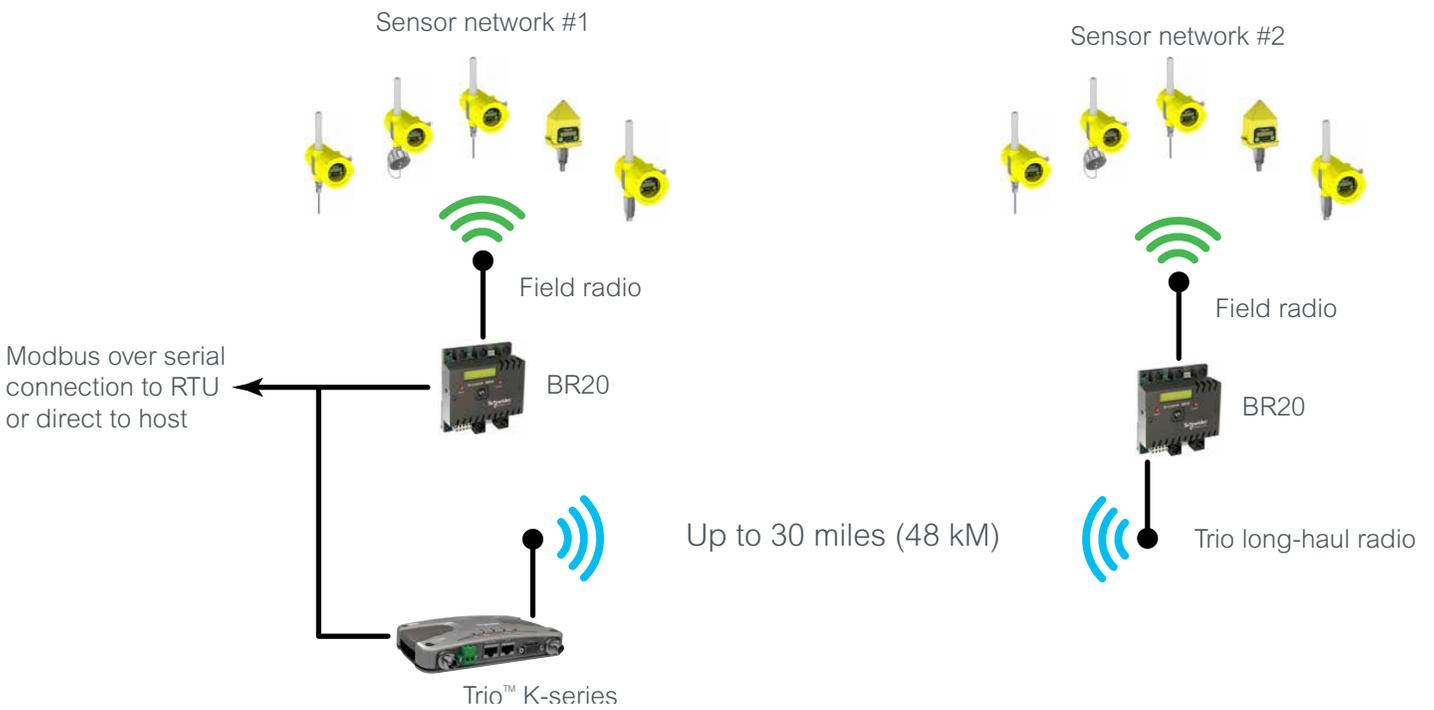
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Cost-effective solutions for
challenging applications

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Knowledge of your process is valuable, but without measurement there is no knowledge. Companies are increasingly forced to measure process variables that are difficult to reach and expensive to support. Distance, harsh environments and absence of power are just a few of the hurdles faced. With operational efficiency as the primary goal, the deployment of self-powered wireless instrumentation provides the knowledge you need at a price you can handle.

With a wide range of available instruments for temperature, pressure, flow, level, and more, Accutech™ instrumentation is suited to many industrial applications, including upstream Oil & Gas and remote plant applications in Waster and Wastewater.

Accutech field instruments are easy to install being self-contained with power, radio, and sensor. The high-performance, license-free radio and long-lasting battery reduce support costs while delivering your valuable data.

Sensor network #1

Sensor network #2

Field radio

Field radio

Modbus over serial connection to RTU or direct to host

BR20

BR20

Up to 30 miles (48 kM)

Trio long-haul radio

Trio™ K-series

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Take ownership of your field instrument network

Installation of a complete wireless instrument network cannot be easier than using Accutech instruments, with push button configuration, integrated link tests, and rugged compact designs.

Dependable, self-powered, spread-spectrum radios (900 MHz and 2.4 GHz) provide effective network connectivity and long-term service.

Tested for use in harsh locations, Accutech field instruments can function in extreme environments of temperature and humidity and come with a three-year warranty.

Flexible wireless communication

Accutech networks use 900 MHz or 2.4 GHz license-free, frequency-hopping, spread-spectrum radios, offering superior ranges of up to 3,000 ft (~1,000 m) using standard integrated antennas. Extended-reach options include external directional antennas and an integrated Trio long-haul data radio that offers 256-bit AES encryption.

Easily configured, highly scalable deployment

Each Accutech base radio can support 100 field instruments with up to 1 sec sampling on instruments; 256-base radios can coexist for extended scalability. Push button configuration and simple link test features allow entire networks to be deployed in hours.

Ease of use, low maintenance

Standard Accutech field units include a single D-cell lithium-thionyl battery that offers up to 10 years of service, depending on data rates and battery options. Advance notification provides indication before a new field-replaceable battery is required.

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Maximize ROI, improve efficiency, and help ensure safety

Engineered for challenging applications, Accutech networks help to reduce costs and lessen holes in your operational data monitoring.

- **Reducing installation costs:** Reduce cabling, trenching, and conduit costs. Self-powered means no regenerative power systems.
- **Increased productivity:** Monitor process variables you could not before. Quick configuration, instant connectivity, and little maintenance.
- **Help ensure safety:** Integrated field units tested for harsh locations enable data point monitoring in tough environments.

Industry standard connectivity

Accutech instrumentation supports industry-standard modbus protocol, providing interoperability with a wide range of industrial equipment and host systems.

Certified and durable

With NEMA4X packaging, Accutech wireless products are designed for demanding applications and are certified CSA Class 1, Div 1 and ATEX/IECex (-ai and -d). A push button interface enables configuration in harsh environments.

Configure and monitor from base radio

Accutech manager configuration and management software provides a user-friendly commissioning interface for Accutech networks, offering remote configuration and firmware upgrades, enhanced diagnostics, field unit authentication to base radio, and trending/data collection.

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Where traditional instruments struggle with operational and budget goals, Accutech wireless instrumentation provides the solution.
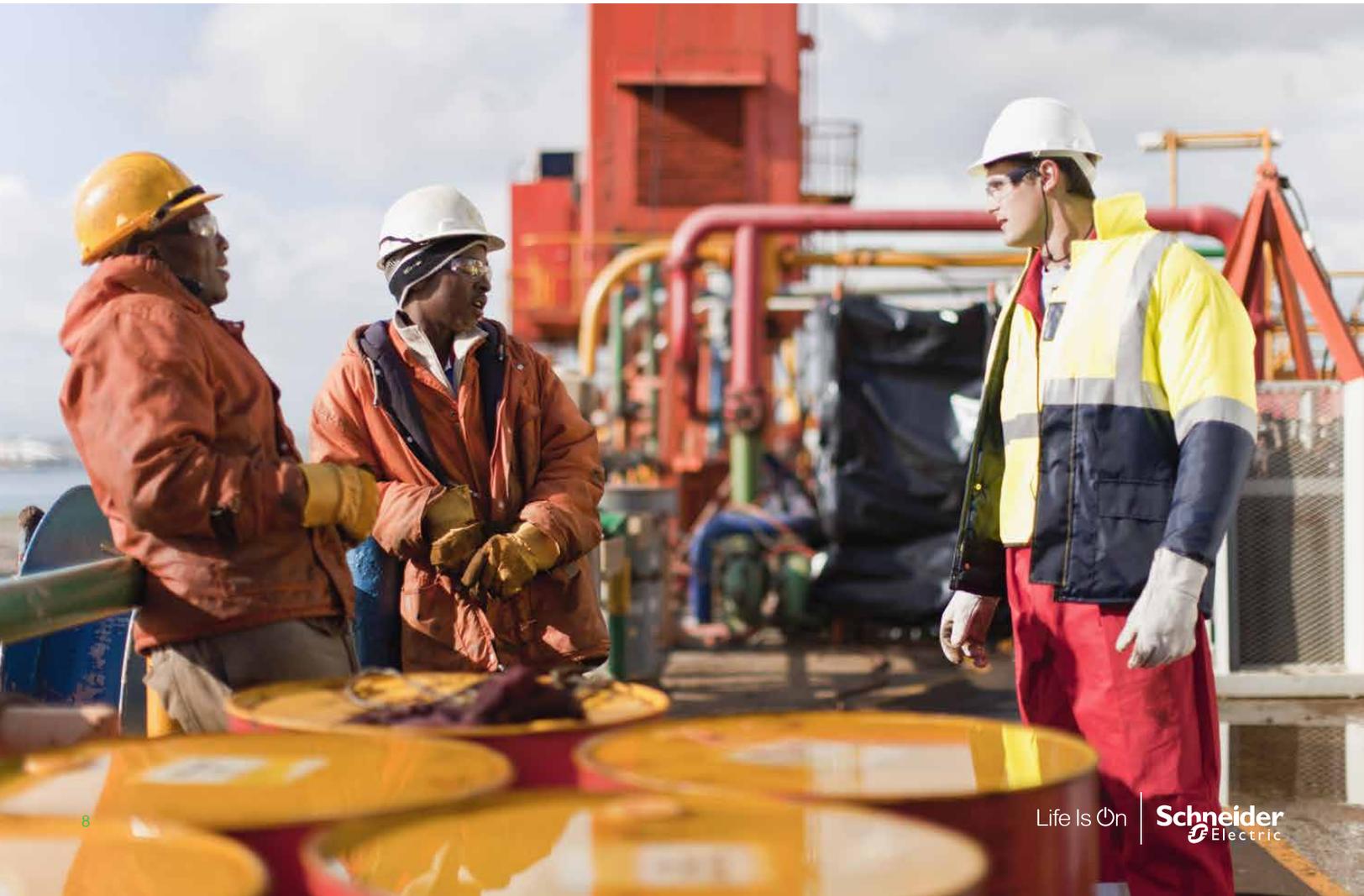
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A toolset for challenging applications

Accutech instrumentation offers a versatile selection of instruments and base radios with performance-enhancing options that can satisfy any application. Optional external sensor configurations allow installation in below-ground areas or on process equipment that is hard to reach. External hi-gain antennas are available for complex environments where considerable obstructions and ultralong reach are required.

With this kind of flexibility Accutech field instruments becomes a key element in any challenging application:

- Wireless wellhead monitoring and control (including plunger arrival)
- Tank level measurement (with dual float liquid interface option)
- Environmental monitoring (storm water, irrigation, reservoirs, etc.)
- Pressure measurement in any process, from 5 psi to 15,000 psi
- Monitoring remote sites with discrete input switches
- Delivering 4 – 20 mA signals from third-party instruments
- More … limited only by imagination

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Product overview

Base radio

BR10

Div I, Zone 1

Base radio

BR20

Div 2, Zone 2

Base radio

Level

GL10

Gauge level

SL10

Submersible level

FL10

Float level

I/O

AI10 | AV10

Analog input

SI10

Switch input/output

VC10

Valve control

4AO, 8SW,
4AO-8SW

Output modules

Pressure

AP10

Absolute pressure

GP10

Gauge pressure

DP20

Differential pressure

Temperature

RT10

RTD temperature

TC10

Thermocouple temperature

Flow

TM10

Turbine meter totalizer

Specifications

BR10

Base radio

- Supports 100 field units with 915 MHz or 2.4 GHz radio
- Serial modbus via RS-485
- Remote antenna option
- 10 – 30 VDC input power
- CSA Class 1, Div1 (xp)
- ATEX/IECEx –d

BR20

Base radio

- DIN rail mount
- Supports 100 field units with 915 MHz or 2.4 GHz radio
- Optional Trio data radio for long-haul connectivity with host
- Serial modbus via RS-485
- 11 – 30 VDC input power
- CSA Class 1, Div2
- ATEX/IECEx –n

AI10 | AV10

Current | voltage multi-input field unit

- Accuracy: ± 0.1% of full-scale reading at reference conditions
- Dual current (4 – 20 mA) or voltage (0 – 10 V) analog inputs
- Includes dual contact closure inputs
- Remote antenna option
- NEMA 4X enclosure
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

AP10

Absolute pressure field unit

- Accuracy:
    - ± 0.25% of full-scale at 20 °C (68 °F)
    - ± 0.5% of URL
- 30 psia and 250 psia max pressure options
- NEMA 4X housing
- Remote antenna and remote sensor option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

DP20

Differential pressure field unit

- Accuracy: ± 0.2% of URL
- Available in five different pressure ranges:
    - +/- 100in H_2O
    - +/- 300in H_2O
    - +/- 25 psi
    - -25 psi to + 100 psi
    - -25 psi to + 300 psi
- Overload limit:
    - 3000 psi
- NEMA 4X housing
- Remote antenna option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

FL10

Float level field unit

- For use with Siemens 2000 series probes
- ¼" and ½" resolution options
- Lengths up to 30'
- Single float or dual float for liquids interface
- NEMA 4X housing
- Remote antenna option
- CSA Class 1, Div1 (IS)
- Available in North America only

GL10

Gauge level field unit

- Accuracy:
    - ± 0.25% of full scale at 20 °C (68 °F)
    - ± 0.5% of URL
- 15 psig and 30 psig max pressure options
- Specific gravity correction and multiple units of measure selection
- NEMA 4X housing
- Remote antenna and remote sensor option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

GP10

Gauge pressure field unit

- Accuracy:
    - ± 0.25% of full scale at 20 °C (68 °F)
    - ± 0.25% of URL (15,000 psig)
    - ± 0.3% of URL (2,500 & 5,000 psig)
    - ± 0.5% of URL (5, 15, 30, 100, 250, 1,000 & 10,000 psig)
- 5, 15, 30, 100, 250, 1,000, 2,500, 5,000, 10,000, 15,000 psig
- NEMA 4X housing
- Remote antenna and remote sensor option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

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RT10

RTD temperature
field unit

- Electronics accuracy:
  ± 0.1% of reading
- 4 wire 100 or 1000 ohm
  DIN RTD
- Integrated RTD or junction
  box option for customer
  supplied RTD
- NEMA 4X housing
- Remote antenna and
  remote sensor option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

SI10

Switch input field unit

- Dual contact closure
  switch input with counter
  function
- Counter frequency up
  to 5 Hz
- Optional dual switch dry
  contact outputs capable of
  switching 1A @ 30 V
- Remote antenna option
- NEMA 4X housing
- CSA Class 1, Div1 (IS)
  for models without outputs;
  Div2 with outputs
- ATEX/IECEx –ia for models
  without outputs; IECEX-d
  for models with outputs

SL10

Submersible level
field unit

- Submersible hydrostatic
  pressure sensor
- Accuracy: ± 0.5% of URL
- Pressure ratings up to
  30 psi (2 Bar), lengths
  to 75' (15 m)
- Vent to atmosphere
  or to tank
- Remote antenna option
- NEMA 4X housing
- CSA Class 1, Div1 (IS)
- ATEX/IECEX –ia

TC10

Thermocouple
temperature field unit

- types B, C, E, J, K, L, N,
  S, T, U
- Electronics accuracy:
  ± 0.1% of full-
  scale reading
- Integrated single T/C or
  junction box option that
  supports dual customer
  supplied T/Cs
- NEMA 4X housing
- Remote antenna option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

TM10

Turbine meter totalizer
field unit

- Interfaces many 2-wire
  magnetic pickups
- Instantaneous flow
  & totalized values
- Frequency 1 Hz to 10 KHz
- NEMA 4X housing
- Remote antenna option
- CSA Class 1, Div1 (IS)
- ATEX/IECEx –ia

VC10

Valve controller
field unit

- Accuracy: ± 0.25%
  of full-scale reading
- Sales valve actuation
  and control
- Control and monitoring
  of plunger lift systems
- Start-up and default
  configuration options
- Integrated pressure
  sensor for active control
  of solenoid pulse width
- Two digital inputs, for
  plunger arrival and discrete
  input applications
- CSA Class 1 Div 1, harsh
  location certified

4AO, 8SW, 4AO-8SW

Output modules

- Direct connection
  between Accutech base
  radios and DCS or process
  control systems
- Provides analog and
  discreet outputs from
  associated field units
- DIN rail mounted.
- Stackable
  (25 max, 100 AO, 200 DO)
- Three models available:
  - 4 channel
    analog output
  - 8 point contact closure
  - Combination of 4 ch
    analog/8 contact

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