

Wireless Valve Monitoring



Keeping the World Flowing

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Rotork is the global market leader in valve automation and flow control. Our products and services are helping organisations around the world to improve efficiency, assure safety and protect the environment.

We strive always for technical excellence, innovation and the highest quality standards in everything we do. As a result, our people and products remain at the forefront of flow control technology.

Uncompromising reliability is a feature of our entire product range, from our flagship electric actuator range through to our pneumatic, hydraulic and electro-hydraulic actuators, as well as instruments, gearboxes and valve accessories.

Rotork is committed to providing first class support to each client throughout the whole life of their plant, from initial site surveys to installation, maintenance, audits and repair. From our network of national and international offices, our engineers work around the clock to maintain our position of trust.

Rotork. Keeping the world flowing.

Introduction

RI Wireless provide a revolutionary concept of wireless valve monitoring in the process industry. Its field proven solution provides real time position-indication to the control system and enables predictive maintenance on actuated valves using its diagnostics capabilities, driving CAPEX and OPEX reduction while increasing safety and productivity for its customers.

The Plant

- Designed for the Process Industry and Utilities
- For existing plants and new installations
- Addresses concentrations of valves
- Certified as Zone 1 Intrinsically-Safe

The Solution

- Real time monitoring of valves
- Full range position and limit indications
- 5 year battery life
- Predictive valve failure indications
- Robust wireless system
- Redundant mesh network
- Conforms to industrial standards
- Fully integrated with all standard automation systems: PLC/DCS/SCADA
- Easy, non-disruptive and quick implementation on hot lines
- Fraction of the cost compared to wired alternatives

The Value

- Increased yield - reduced risk
- Comprehensive monitoring added to the plant
- Predictive valve maintenance
- Eliminates unnecessary shutdowns
- Improved safety
- Enhanced operational efficiencies
- Improved plant profitability - reduced operational costs
- Improved accountability with increased automation
- Smooth implementation
- Quick ROI

Standards

- ATEX approved for Zone-1 intrinsically safe installations
- TUV/CE certified
- Integrated OPC interface to PLC/DCS/SCADA
- Wireless standards supported: ISA 100.11a and ZigBee Pro
- Compatible with HART management system
- Embedded in ISA100
- IP 66

Predictive Maintenance

- Monitoring of valve opening and closing profiles
- Detecting of variations from reference profiles
- Creating alarms and enabling predictive maintenance
- Adjustable reference profile and limit



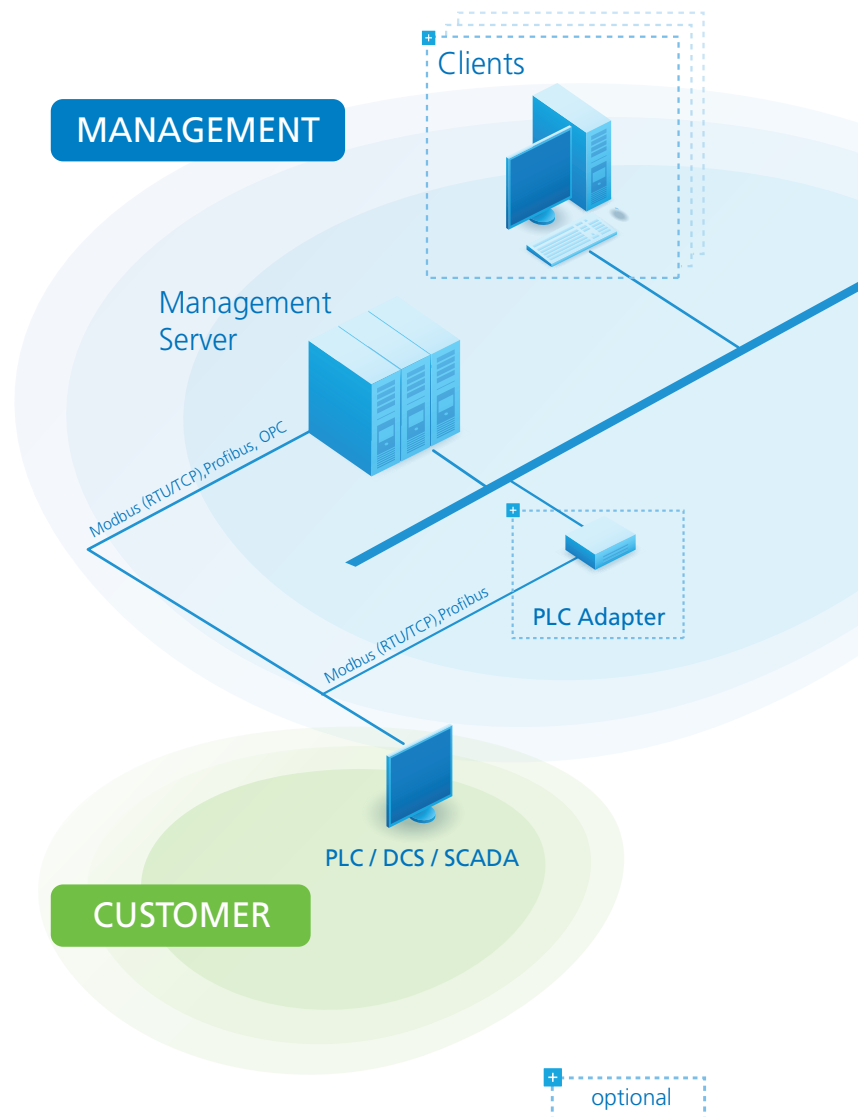
Industrial Wireless Monitoring

RI Wireless monitoring system is an end-to-end solution of a sensors network used to monitor various types of valves operating in a process plant. It provides both field and control room operators a comprehensive picture of valve performance status in real time. RI Wireless enables wireless valve monitoring without using cables or any other infrastructure.

The system comprises a small battery-powered Valve Monitoring Device. It installs on any type of existing or new valve and/or actuator. Mounting options include NAMUR interface for valve actuators or ISO 5211 interface for manual valves. The Valve Monitoring Device collects dynamics-of-state change of an actuated valve, then transmits it as a 64-point packet. This provides preventive data on the actuated valve set.

The systems also comprises a network of Valve Monitoring Device Routers that transfer monitoring data from the Valve Devices on a wireless MESH network to the Tunnelling VDR. The latter is a last hop VDR that transfers collected data from the VDRs network to RI Wireless Gateway. Several TVDRs can be connected via TCP/IP to RI Wireless Gateway, an industrial computer that manages the RI Wireless system.

RI Wireless Management System is a software management tool. It monitors and reports valve position and health status. WMS provides data in common industrial standard connections to HMI, DCS and PLCs on-site. The system's Operator Device is a handheld instrument used by the process line operator for setup and local data retrieval.



VMD – Valve Monitoring Device

Small, self powered wireless sensor and transceiver for bi-directional communication. The device is bracket mounted on the valve or actuator, and it transfers analog position and other vital monitoring data in real time.

DIB – Digital Input Box

Small, self powered input box capable of receiving up to 3 digital inputs and transfers the data in real time.

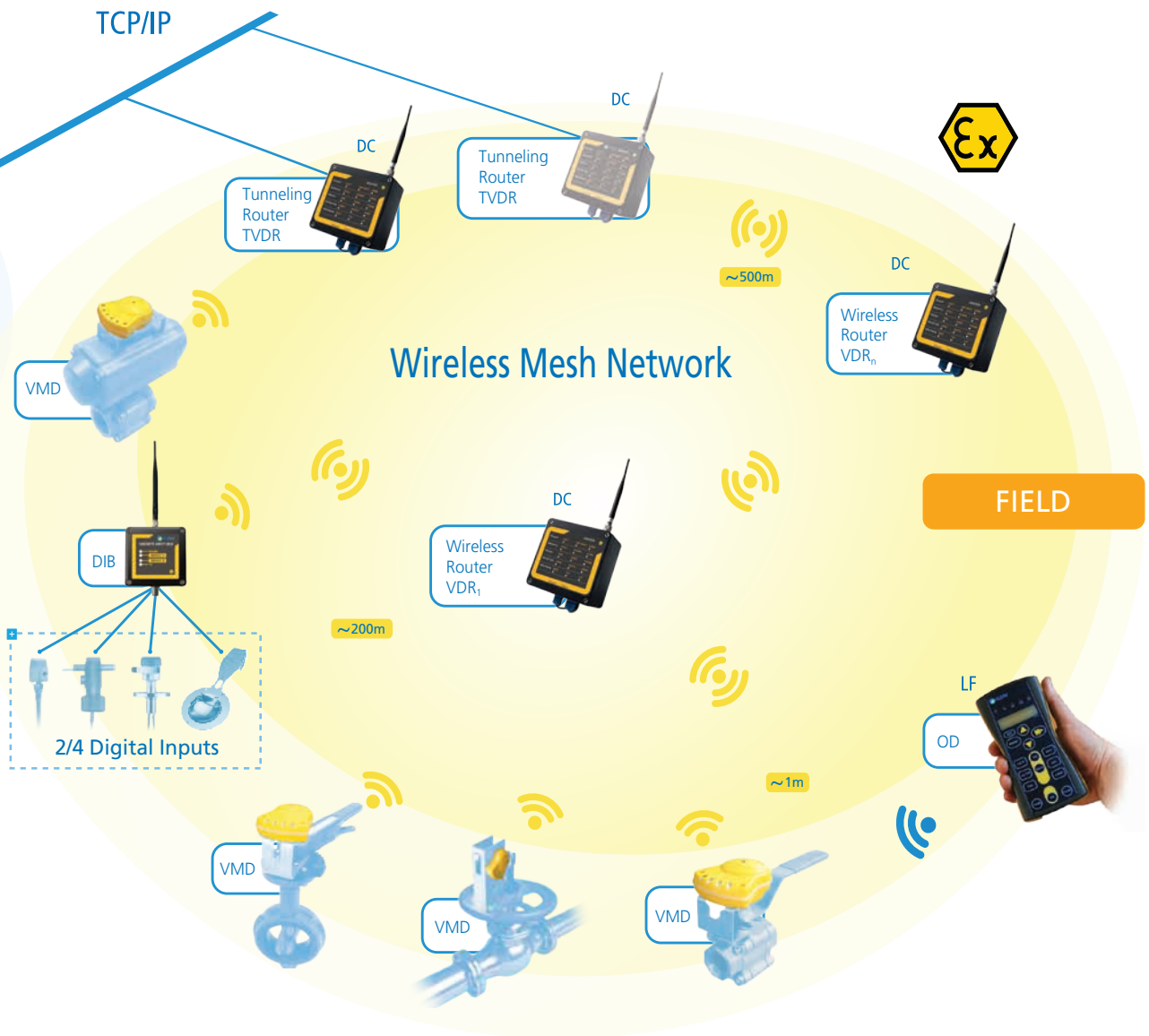
OD – Operator's Device

A hand-held wireless device that communicates with RI Wireless VMD and network components in the field, using low frequency and ZigBee one-on-one communication. The OD delivers messages and performance data to the operator and is used to support installation, configuration, provisioning, calibration, maintenance and network performance.

Wireless Router

Each Wireless Router collects and routes data from up to 32 associated VMDs and nearby Wireless Routers and transmits the information to the control center. Data transfer redundancy is assured by automatic routing of the wireless devices through a Mesh Topology.

Industrial Wireless Monitoring



Tunneling Router

Last hop Wireless Router which transfers data collected from the wireless network to the management components of the TCP/IP network. Two or more Tunneling Routers ensure redundancy.

WMS Clients – Access to the RI Wireless sensor network and information

The GUI Client provides a view to sensors data and network status and allows configuration of remote sensors and alarms. The Client Connectivity Service forwards Valve Monitoring Device data and status to the third party PLC, DCS and SCADA. Supported protocols are: Modbus RTU, Modbus TCP/ IP and OPC DA.

WMS – RI Wireless Management System

Central server software on the TCP/IP network which maintains the wireless network, performs data logging and publishes sensor information to clients.

PLC Adaptor – PLC/SCADA/DCS interface

The RI Wireless hardened connectivity device (embedded software). Adds robustness to the entire system by providing industrial-class and redundant interface to PLC, DCS and SCADA, as well as network management abilities.

Valve Monitoring Device

Valve Monitoring Device Overview

The RI Wireless Valve Monitoring Device (VMD) is the basic component of the RI Wireless Monitoring System. It is installed on top of the monitored valve or actuator and consists of a stem attached mechanically to the valve or actuator axle.

The VMD incorporates the means and sensors to measure the angle which corresponds to the opening status of the valve (in degrees or opening percentage). The valve status is transmitted by an internal bi-directional transceiver that is based on the standard ZigBee protocol. A dedicated Low Frequency (LF) receiver, in the VMD, supports unique maintenance and provisioning procedures.

VMD Operation

The VMD is a smart device with three integrated processors that continuously maintain the highest quality of performance for fast response times, high communications reliability, and optimal battery consumption (5 years with one set of replaceable batteries). The VMD is packaged in a compact plastic enclosure that complies with the environmental requirements typical of the process industry.



The RI Wireless Valve Monitoring Device can be installed on valves using ISO/DIS 5211.2 F03 to F12 flanges and on actuators using the NAMUR interface. On other valves a mechanical bracket is used.

Valve Monitoring Device Specifications	
Wireless Communication (RF)	
Mode	Two way Radio – IEEE 802.15.4 – 2006 at 2.4 GHz
Communication Protocol	ZigBee Pro version
VMD max Transmitted Power	+3 dBm
VMD Antenna	Internal +2 dBi peak. Optional external antenna F-SMA connector (VMD mounted or remote)
Communication range VMD/VDR	Open space – about 70 m / Indoors at non obstructed environment – about 25 m
Latency	Less than 0.1 sec in average (assuming one hop)
Approach	
Measurement	Angle of valve's stem position
Update Rate	VMD is at sleep at all times. It transmits its status every 5 min or when a valve is moved more than 1.5°
Sense Movement Duration	Between 30 msec to 7 minutes
Sector	Quarter turn: - 10° to +100°
Resolution	0.1°
Accuracy	±1°
Calibration and setup on valve	This is done using the Operator Device (OD) with short range low frequency wireless communication between OD and VMD
Message timing	Each message is sent by the VMD with a real time stamp
Low Frequency (LF)	
Characteristics	125 kHz (3 channels) – Short range receiver continuously open, also when VMD is turned OFF - VMD on/off, calibration, identification, commissioning, test, etc.
Sensitivity	~2 mV each channel
Data Rate	1,366 bps
Modulation	OOK Manchester
LF Range (with OD)	~1 meter
General	
Additional VMD Data	VMD internal temperature, battery voltage and unit's house-keeping parameters
Battery	2 X Lithium Tadiran ½ AA TLL5902. Field replaceable
Battery Life	5 years assuming one valve position change per hour and nominal configuration
Valve Transition Measurement (optional)	After 1.5° move of valve, VMD collects up to 64 readings of valve position every 5 ms up to 9 sec (user selectable in discrete steps) and transmits them as a packet
VMD software upgrade	Both ZigBee stack and MCU application can be upgraded through the ZigBee link (Download Over Radio)
Case Material	Nylon 12 with 50% glass beads, UV stable
Operating Temperature	-40 to +85 °C
Sealing	IP66 grade
ATEX	Category 2 / Division 1 - II 2 G Ex ia IIC T4 (intrinsic safety Zone 1/21)

Valve Device Router

Overview

The VDR (Valve Device Router) collects reported data from up to 32 associated VDs and wirelessly transfers the information to the next VDR.

The TVDR (Tunneling VDR) is the last-hop VDR that passes on all the collected data from the string of VDRs to the site network for processing and analysis.

Operation

The VDR network acts as a relay that transmits messages, received from remote VDRs, through a ZigBee wireless network, until they reach a TVDR.

One or more TVDR(s) are connected to the RI Wireless Gateway using TCP/IP communication, thus facilitating bi-directional, redundant communication between all VDRs and the site network.

ZigBee mesh technology is implemented ensuring the required routing redundancy for very high communication reliability. The TVDR generates a wireless heartbeat message, over fixed periods, and broadcasts it between the VDRs for mapping routes and diagnosing communications performance.

In the event of a unit failure, the mesh technology automatically reroutes communication with the relevant VDs (or VDRs) thus ensuring continuing network communications.

An operator can use an OD to communicate with VDs, VDRs and TVDRs for installation, configuration and maintenance purposes.



Configuration

The VDR has one connector for an external power supply while the TVDR has two additional connectors: a USB port for testing and maintenance and a TCP/IP port for network connection.

VDR/TVDR Specifications	
General	
Network architecture	VDRs and TVDRs provide a full self-recovery mesh architecture
VDR/TVDR max transmitted power	+16 dBm (+ additional antenna gain)
Antenna	External, 18 cm, +3 dBi with Male N Type connector
VDRs per VDR	32. Will be increased in next VDR generation
VDRs per network	Practically limitless
TVDR	From ZigBee domain to Ethernet TCP/IP and back. Transfer of wireless data to Gateway
VDR	From ZigBee to ZigBee domains. VMD range extender
TVDRs per network	Not limited
TVDR connection	Two Glands. 3 pin terminal block for DC. 5 pin terminal block for Ethernet
VDR connection	Two Glands. 3 pin terminal block for DC
Control	Internal jumper and/or LF command from OD
Indications	15 coloured LEDs on Front Panel
Mounting	On wall by special installation bracket
Receiver sensitivity	-97 dBm typical
Communications	
Communication range router to router	Open space – about 200 m Indoors, in non-obstructed environment – about 100 m
Power	
Backup supply	2.2 AH Li-Ion rechargeable battery VDR – 11 hours TVDR – 4 hours Battery is charging when the unit is powered (also in the OFF state)
DC supply	VDR 7-36 V / 7.5 W max. TVDR 7-36 V / 10 W max.
ATEX	CE Ex II 3 GD Ex n IIC T4 / NEC 500-Class I, Division 2, Groups A & B T4; NEC 505- Class I, Zone 2, AEx n, IIC T4

Operator's Device

Solution Highlights

The OD is a mobile field operational panel for the RI Wireless Valve Monitoring System used by field operators. The OD enables operators to effectively perform a variety of operational, setup, maintenance and monitoring tasks related to all RI Wireless System components (VMD, VDR and TVDR).

The most basic functions of the OD are turning the devices ON/OFF, supporting installation and commissioning, and receiving real-time feedback in regard to the status of a particular Valve Monitoring Device (VMD).

Operation

The operator uses the OD to as a portable control panel to conduct one-on-one communications with various RI Wireless devices. Login ensures that each operator is associated with all conducted operations, thus providing comprehensive support for full traceability when an operation is executed.

In addition, the OD is used to configure new RI Wireless devices prior of joining the network, report performance, and assist in installation and maintenance tasks.

The OD communicates with VDs and VDRs/TVDRs using a low frequency (LF) channel (to communicate with the device) and a ZigBee channel to receive a response (from the device or from the Gateway).

As part of the system commissioning procedure, the OD transfers – over the LF channel – the required AES key so that VDs can join the secure ZigBee network. The OD manages a log-in mechanism in which each user has a unique username and password.



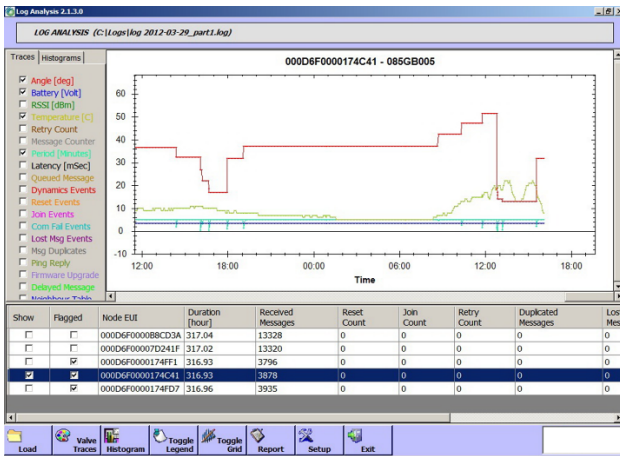
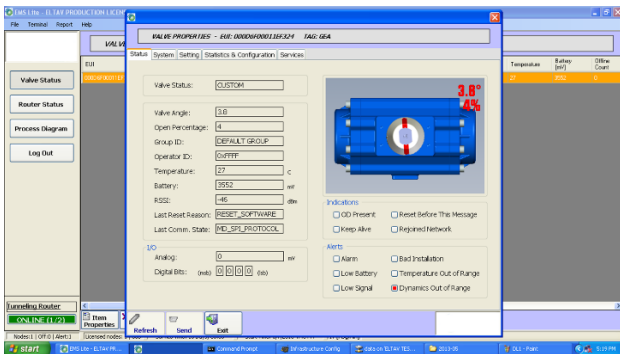
OD Specifications	
General	
OD Communication	Magnetic at Low Frequency (LF at 125 kHz) from OD to device. Device responds back on ZigBee channel
OD LF range	Up to 1 m typical
OD display	Alphanumeric, back lighted, 2 rows 12 characters
Keypad	16 special membrane keys
LF data rate	1366 bps
Battery	0.75 AH Li-Ion rechargeable battery. Charged when unit connected to USB
Indications	BAT full charged; BAT fast charge; Low BAT; USB activity; ZigBee / LF transmit
Supported Functions:	<ul style="list-style-type: none"> • Identify all devices in range • Select a device for a one-on-one session • Turn device on/off • Set up the device by providing all required data either manually or from a preloaded template/list (loaded by the WMS package) • Perform calibration of VMD • Command devices to join/leave the network • Read and present setting of device • Read and present status of device (continuously updated) • Monitor network status • Evaluate radio coverage • And many more

RI Wireless Management System

The RI Wireless Management System is a central server software programme on the TCP/IP network which maintains the wireless network, performs data logging and publishes sensor information to clients.

The GUI Client provides a view to sensors data and network status and allows configuration of remote sensors and alarms.

The Client Connectivity Service forwards Valve Monitoring Device data and status to the third party PLC, DCS and SCADA. Supported protocols are: Modbus RTU, Modbus TCP/IP and OPC DA.



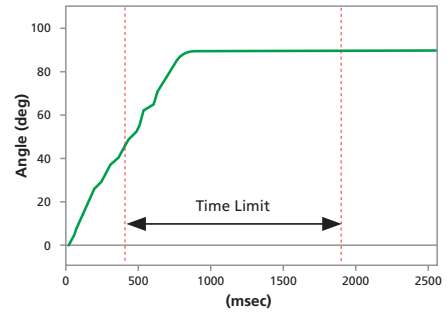
PLC Adaptor – PLC/SCADA/DCS interface

The RI Wireless hardened connectivity device (embedded software). Adds robustness to the entire system by providing industrial class and redundant interface to PLC, DCS and SCADA, as well as network management abilities.



Normal valve operation

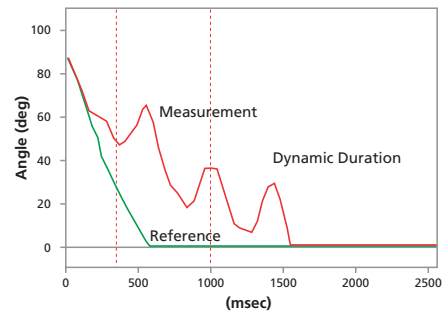
Valve Dynamics



Dynamics Duration: 750 msec

Disrupted valve operation

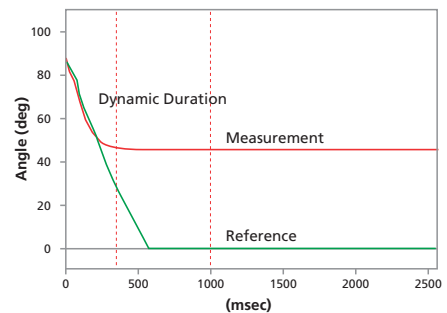
Valve Dynamics



Dynamics Duration: 1580 msec

Incomplete valve operation

Valve Dynamics



Dynamics Duration: 340 msec

Digital Input Box

Solution Highlights

The Input Box (DIB) consists of a wireless monitoring module using the most advanced 2.4 GHz 802.15.4 communication protocols. It has 3 digital dry contact inputs and one analog input (future option). The DIB is a non-routing sleepy device.

The DIB is housed in an IP65 industrial box (IP66 for non-ATEX) and external antenna. It is powered by four 1/2 AA batteries type Tadiran TL4902 that power the unit for more than 8 years assuming not more than 10 input changes per hour. Whenever one of the inputs changes state, the DIB reports the state of the three dry contact inputs and the timing between the dry contact events.

The DIB reports the inputs state every configurable interval (8 sec to 60 min) or after it sensed a state change in one of the inputs. The DIB temperature, batteries status, the state of the three digital inputs, wireless signal strength, and other housekeeping information are broadcasted with every message. Each DIB message is transmitted with a real time stamp.



Input Box Specifications	
General	
Main Functionality	Wirelessly monitoring of digital inputs (in future also one analog input) Additional Parameters
Additional Parameters	Internal temperature, battery voltage and unit's house-keeping parameters
Battery Life	8 years assuming one input change per hour and nominal configuration
Operating Temperature	-40 to +80 °C
Sealing	IP66 grade, IP65 for EX approved
Measurement	Up to 3 dry contact inputs
Contact resistance	Max 1000 Ohm
Update Rate	Transmits its status on each change in input or every configurable time interval
Message timing	Each message is sent with a real time stamp
Installation	Installed on flat surface or a pipe using a mating bracket
Enclosures	Polyester, Glass-fibre reinforced, halogen-free
Wireless Communication (RF)	
Mode	Two way Radio – IEEE 802.15.4 – 2006 at 2.4 GHz Communication Protocol: ZigBee Pro
Max Transmitted Power	+3 dBm
Antenna	External +2 dBi peak. Optional external antenna F-SMA connector Open
Communication range to router	space – about 100 m / Indoors at non obstructed environment – about 50 m
Latency	Less than 0.1 sec in average (assuming one hop)
Calibration and Setup	
Concept	Using Operator Device (OD) with short range Low Frequency wireless communication
Characteristics	125 kHz (3 channels) – Short range receiver continuously active
Sensitivity	~2 mV each channel
Data Rate	1,366 bps
Modulation	OOK Manchester
LF Range (with OD)	~1 meter

Soldo Wireless Limit Switch Box

Designed for installation in both safe atmosphere and hazardous areas and for use in multiple industries including oil & gas - from gas pipelines to crowded off-shore platforms, where weight is an issue.

Benefits of using this device in oil & gas and power generation industries include the reduction of installation costs, lowering energy consumption and minimising downtime.

Long life battery technology provides up to 8 years maintenance free operation.

Available in either die cast aluminium or 316 stainless steel with different lid choices made from the same enclosure material. Options include lids with a large visual indicator or flat lids without any visual indication.

The Soldo wireless limit switch box achieves ATEX certification (pending) using the Intrinsically Safe (IS) protection method.



Wireless Sensors

RI Wireless can offer a range of additional wireless sensors for pressure, level and temperature measurement. These battery powered sensors are very easily fitted and suitable for hazardous and non-hazardous locations and transmit via the ZigBee mesh wireless network. They enable a cost effective solution for additional process and diagnostic information.

Pressure Wireless Sensor

Precision wireless pressure sensor with the ease of installation of a dial gauge. Each sensor has a 5 year battery that powers the sensor and 2-way radio transceiver. Stainless Steel (316S) or Inconel 625 Safe Area; or ATEX Certified Inconel 625. Other pressure fittings available on request.



Available in 0-200, 0-500 and 0-5000 psi pressure range configurations.

Fluid Level Wireless Sensor

Precision wireless fluid level sensors measure by means of a submersible level probe that is resistant to petrochemicals. For routine use in monitoring remote tank levels for chemical injection or fuel storage.

Each sensor has a 5 year battery that powers the sensor and 2-way radio transceiver. Options include cable type for chemical or organic resistance; 0-5 psig or 0-15 psig range; Safe Area or ATEX certified.



Temperature Probe Wireless Sensor

Precision wireless temperature probe with the ease of installation. Each sensor has a 5 year battery that powers the sensor and 2-way radio transceiver. Options include probe material & dimensions; fitting; Safe Area or ATEX Certified.



Pakscan™ Wireless

The world-leading Rotork *Pakscan* network control system is flexible and cost-effective to deploy thanks to the *Pakscan* Wireless option. Over a secure wireless mesh network it maintains control of actuators and other field devices, as well as gathering extensive operating data for efficient, centralised asset management.

Whether you are installing a completely new network or adding to an existing wired installation, *Pakscan* Wireless provides a secure, resilient control and monitoring solution.

With its flexible wireless connectivity, it allows you to add new actuators to your control systems faster, without delays and costs involved in new cable runs. Fast data throughput means it can collect all the operating data you need to both monitor and predict the maintenance needs of Rotork actuators.

The *Pakscan* Wireless network has been designed to provide high levels of security and a degree of redundancy similar to Rotork 2-wire systems. *Pakscan* Wireless is fully integrated and controlled through the *Pakscan* P4 master station.

Easy to expand

With *Pakscan* Wireless there are no network cable runs, so adding or removing actuators is a quick, simple task.

- Add wireless actuators in short time
- Eliminate the issues of laying network cables
- Configuration through P4 master station

Efficient

Pakscan Wireless data gathering saves time and money during predictive maintenance analysis:

- Full actuator log files gathered centrally
- Almost instantaneous reporting
- No need for manual data collection
- Data viewed via web pages and Rotork InSight software

Flexible

Suitable for internal or outdoor applications, *Pakscan* Wireless can adapt to meet most industrial environments:

- A single base station can serve the entire mesh
- Outdoors, actuators can be up to 100 m apart
- Indoors, actuators can be up to 30 m apart
- Data can take up to 7 hops to reach its destination
- Cable runs can connect actuators in pits and black-spots

Secure

Robust security is a key feature of *Pakscan* Wireless. Rotork have designed in strong measures to safeguard your network:

- Strong encryption hides commands from external analysis
- Anti-spoofing prevents malicious take-over
- Private protocol obscures monitoring data

Resilient

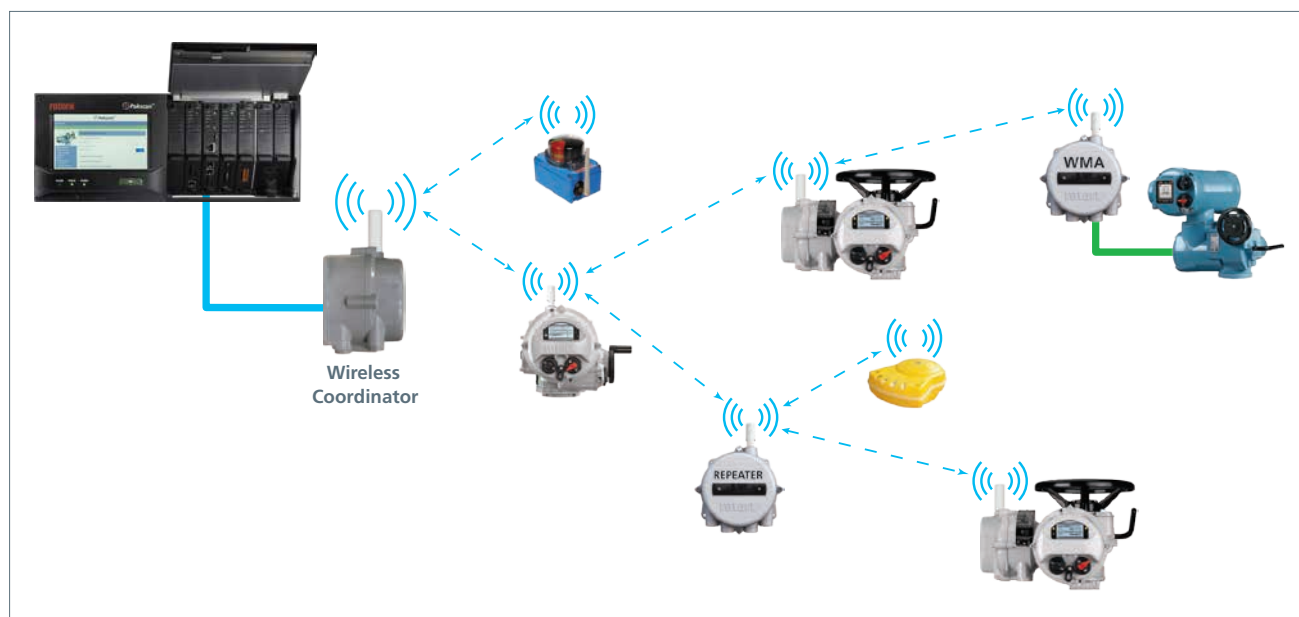
Pakscan Wireless has one of the most resilient network architectures available:

- Built-in redundancy safeguards
- Mesh network dynamically reroutes around faults
- Large frequency and channel options to avoid interference
- International frequency band usage is respected

Host communications

Communication between host and P4 master station uses the industry standard Modbus protocol.

- Ethernet and optional serial connections on the P4 master station
- Modbus TCP/IP and/or Modbus RTU
- Selectable between RS-485 or RS-232
- 1 Modbus database to access all wireless actuator modules



Pakscan P4 Wireless only network

Precision Control and Indication

rotork® Instruments

Rotork Instruments are specialist manufacturers of products for flow control, pressure control, flow measurement and pressure measurement. Our solutions are trusted wherever there is a need for high precision and reliability, including pharmaceutical, biomedical, oil & gas and manufacturing industries.

We have production facilities throughout the world, complemented by a large network of distribution and support centres.

A full listing of our worldwide sales and service network is available on our website at www.rotork.com

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Worldwide Industry and Application Experience

With nearly 60 years of extensive knowledge and experience, Rotork has provided products and services worldwide for virtually every industrial actuator application.

Rotork Instruments offers a range of precision control and valve accessory products from the Rotork Fairchild, Soldo®, Young Tech, Rotork Midland, Bifold® Fluidpower and M&M International companies:

- Isolation valves
- Pressure regulators and boosters
- Relief valves
- Pilot & manual valves
- Solenoid valves
- Field instrumentation
- Cylinders
- Subsea solenoids
- Ancillary products
- Controls
 - I/P Transducers
 - V/P Transducers
 - Switch boxes
 - Pneumatic positioners
 - Electronic positioners and controllers
 - Wireless valve monitoring

Rotork Instruments is proud to offer a diverse range of products which serve many different duties in a wide variety of applications. We also offer a factory customisation service, to create one-off units to meet specific needs.



Projects, Services and Retrofit

rotork® Site Services

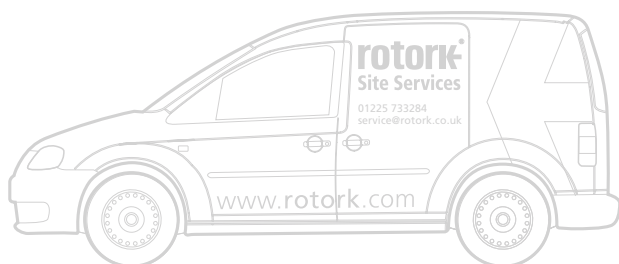
Rotork staff are dedicated to providing client support across all Rotork divisions with the aim of maximising the client production cycle. These teams are based out of service centres around the world and are complemented by factory-trained agents.

Our expert technicians support Rotork customers, allowing us to deliver on our promise of global solutions backed by local service.

We provide a full range of flow control services:

- Emergency and planned service
- Actuator overhauls
- Health checks
- Preventative maintenance
- Retrofitting actuators to existing valves
- Shutdown outages
- Certified inspection and safety checks
- Factory fitting of actuators to new valves
- Plant optimisation
- Repairs and upgrades
- Loan actuator service
- System Integration projects
- Automation projects

Visit www.rotork.com to identify your nearest Rotork Site Services centre.



Client Support Programme

Rotork offers a premium level of product reliability and availability through the flexible Client Support Programme (CSP). Designed to facilitate the highest production demands while providing a tiered approach to maintenance, the CSP is committed to reducing maintenance downtime and costs.

Through consultation, the CSP is tuned to deliver the optimum level of maintenance through predictive maintenance algorithms.

Features of the CSP are:

- Fixed term prices for Rotork products and services
- Customisable cover based on equipment criticality to production
- Equipment performance related targets for reliability and availability
- Priority support with customisable response times
- Fully parts and labour inclusive, no additional costs or discounted labour and parts
- Fix or replace options
- Periodic equipment performance and status reports
- Built-in regular health checks on all equipment

Benefits of the CSP include but are not limited to:

- Year-on-year reduced maintenance costs
- Easy budget management
- Maximised production resulting in reduced downtime
- Year-on-year improved reliability and availability
- Optimised resource usage to accelerate in-house projects
- Reduced lifecycle costs



Projects, Services and Retrofit

Preventative maintenance

To maximise plant up-time and minimise operating costs we offer clients a range of preventative maintenance programmes. We tailor the service in every case to reflect the type of actuators in service, the availability of asset information and the criticality of the plant.

Automation projects

This is a growing requirement and some of our service teams have the wide range of skills necessary to offer a “one-stop-shop” to automate part or all of a customer’s process. Our capabilities cover all of the installation phases (scoping, design, procurement, manufacturing, installation, commissioning) on the broad scopes that typically surround actuation projects.

Emergency and planned service

We provide a full range of actuator services, covering any type of actuator in any location, including hazardous environments. Our services include installation, commissioning and upgrading as well as connection and installation of bus communication systems. We are also skilled at troubleshooting and repairing damaged or deteriorating assets. Depending on your requirements, we can offer guaranteed emergency response times or planned response.

Shutdown outages

For those customers who run tightly-scheduled shutdowns, we engage closely in the project to help meet demanding deadlines. A typical example might involve our staff removing large numbers of actuators, overhauling them in our workshops and re-commissioning them as part of the maintenance of a larger unit.

Factory fitting of actuators to new valves

The careful assembly of valve and actuator is critical to ensure that an automated valve performs correctly and reliably. Whilst this service is often carried out by valve manufacturers, if there is a need we can provide this service.



Health checks

To help customers understand the state of their plant and assets, to better inform maintenance and replacement decisions, we offer full inspection and reporting. In addition to a detailed and intrusive inspection of the actuators, we offer extra insights from our original factory build data.

Retrofitting actuators to existing valves

We have extensive experience in fitting actuators to valves, penstocks and dampers that are already installed as part of existing plant. Whether customers are replacing obsolete actuators, changing power sources or motorising manual valves, we offer a tailor made solution to meet customers’ specific requirements.

Actuator overhauls

After a long service life it is sometimes preferable to overhaul rather than replacing actuators. In our workshops we completely strip and rebuild actuators, returning them to their original state.



rotork®

Keeping the World Flowing



www.rotork.com

A full listing of our worldwide sales and service network is available on our website.

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Rotork is a corporate member of the Institute of Asset Management



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