

Bullhorn RM4014 and RM4015 Remote Monitors



The RM4014 and RM4015 are satellite-based, reliable, two-way, wireless remote monitoring units (RMUs) for cathodic protection applications, and they're Built Bullhorn Tough. The only difference between these units is that the RM4014 is mounted externally, while the RM4015 is small enough to fit inside most rectifier cabinets. Otherwise, both units have the same functionality.

These units monitor pipelines, well casings, tanks and other assets by reading rectifier DC volts and amps, pipe-to-soil potential, shunts, and more. Additionally, they can survive the harshest of conditions, with built in surge protection and an optional high-energy surge arrester.

Remote Monitoring For:

- DC volts and amps
- Pipe-to-soil potential
- Shunts
- Accumulator

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Key Benefits

Rugged

The unit can survive the harshest of conditions, with built in surge protection and optional high energy surge arrester.

Small

Reduce installation time and the risk of vandalism by placing the remote monitoring unit inside the rectifier.

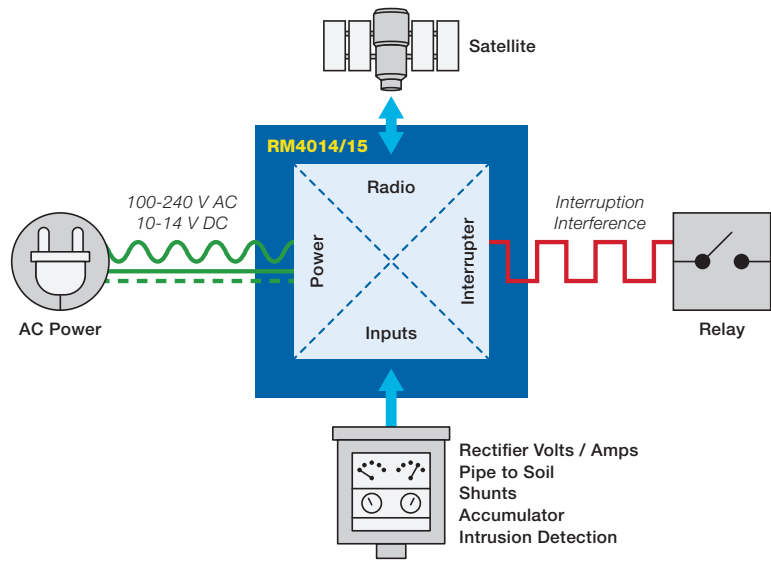
Remotely Operated via the Web and Mobile

Never have to leave the office to operate a unit, as the mobile and web apps can be used to change configuration, take a measurement, and control interruption.

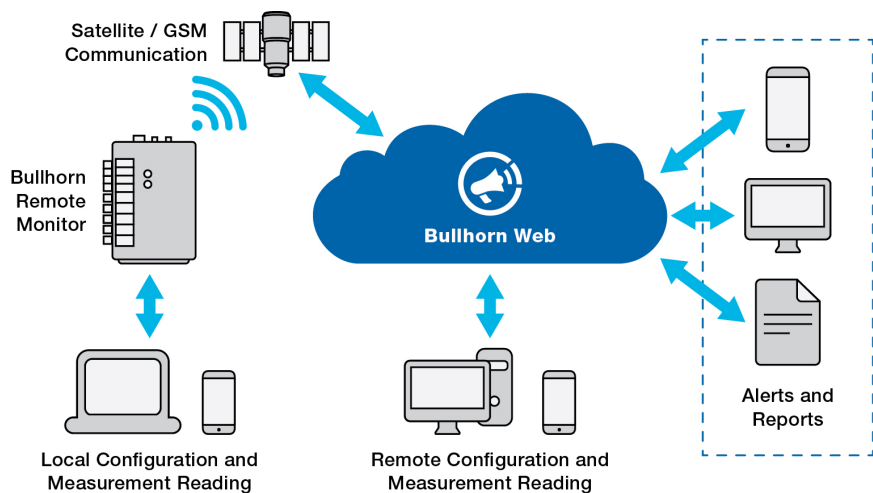
Integrated Compliance Solution

Complete end-to-end system to prove regulatory compliance, with filtered measurements easily imported into PCS where they can be made into compliance reports.

The RM4014 and RM4015 remotely collect cathodic protection (CP) measurements used to demonstrate corrosion mitigation effectiveness. They monitor pipelines, well casings, tanks and other assets by reading rectifier DC volts and amps, pipe-to-soil potential, shunts, and more. GPS synchronized interruption is available at time of purchase or as a field upgrade. The Orbcomm IsatData Pro satellite network is used for global, low-latency, two-way communications. Measurements are automatically uploaded to Bullhorn Web, a web-based asset manager that works with PCS™ to form a full end-to-end regulatory compliance solution from field measurement to reporting. The RM4014 is mounted externally, while the RM4015 is small enough to fit inside most rectifiers.



RM4014 and RM4015 System Diagram



Bullhorn Communications Architecture

Bullhorn RM4014 and RM4015 Remote Monitor Specifications

Inputs

4 Analog Channels

Channels 1, 3, 4 DC voltage range:	+/- 5 V
Channels 2 DC voltage range:	+/- 100 V
Accuracy of 2% of reading	
Scan rate:	16 scans per second
Channel-to-channel isolation:	≥ 250 V DC

2 Digital Channels

Functions:	digital input, accumulator, accumulator reset, or contact closure (0 - 15 V DC)
Logic levels:	minimum Logic 1 = 2 V; maximum Logic 0 = 800 mV
Scan rate:	16 scans per second
Accumulator maximum cycle rate:	1 cycle/2 s
minimum state change period:	1 s
Minimum pulse width:	250 ms

Interruption Option

Maximum current:	500 mA DC
Output voltage:	10-14 V DC
Minimum switching cycle:	1 s
On/off cycle increments:	100 ms
Interruption modes:	daily, interference, start/stop, and continuous
Interference mode:	set up to 99 rectifiers or groups for influence studies
Relay types:	NO or NC, solid state or mechanical

Software Interface

Bullhorn Web

Bullhorn Tools for PC

Communications

Orbcomm – IsatData Pro

Poll, reconfigure, and set alarm thresholds over-the-air

Power Supply

AC:	100 - 240 V AC with included AC/DC converter
DC:	10 - 14 V DC with interruption; 5-25 V DC without interruption
Backup:	internal sealed rechargeable battery

Dimensions

Internal mount:	polycarbonate enclosure (7.9" x 5.0" x 2.2")
External mount:	NEMA 4X compliant enclosure (4.0" x 7.3" x 12.4")

Data Integrity

Data stored in non-volatile (EEPROM) memory

Environment

Temperature:	-30° C to +70° C
Humidity:	0 - 100% non-condensing

Safety and Compliance

Certification mark:	TUV
Tested safety standards (RM4010 only):	EN61010-1:2010 EN61010-2-030:2010 CAN/CSA C22.2 No. 61010-1-2012 CAN/CSA C22.2 No. 61010-2-030:2010 UL61010-1:2012 supplemented by UL61010-2-030:2012
Emissions:	FCC Part 15
Surge:	8kV Air / 4 kV Contact