

Bullhorn[®] RM4210 Remote Monitoring Unit and TRITON[®] Coupon Test Station



The Bullhorn RM4210 AC/DC coupon remote monitoring unit (RMU) monitors oil and gas assets in cathodic protection (CP) applications. Combining the RM4210 with the award-winning TRITON Coupon Test Station ensures unparalleled durability, accuracy and ease of installation. With the combination, you can diagnose AC current issues, monitor AC current and optimize AC mitigation systems.

These devices take accurate AC and DC measurements on three coupons, along with pipe-to-soil measurements using the TRITON's built-in reference electrode. The RM4210 uploads the measurements via satellite to Bullhorn Web, a web-based asset manager, making it easy for you to view your measurements and determine the best ways to mitigate the risks associated with induced AC corrosion.

Together, the RM4210 and the Triton coupon test station are a turnkey solution for monitoring:

- AC coupons
- AC and DC current density
- AC and DC pipe-to-soil
- Native pipe-to-soil
- PCR AC Current

Bullhorn RM4210 and TRITON Coupon Test Station

Key Benefits

Form factor

The RM4210 is a fully integrated unit that is mounted on top of the TRITON. All components, including the antenna, are internal so it is easier to transport and install. It's also less likely to incur damage that will require a future repair visit.

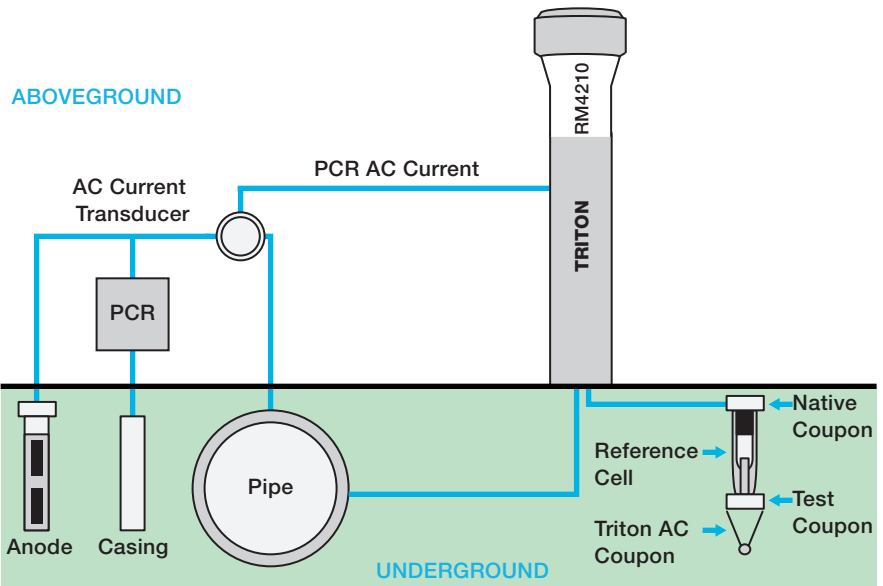
Ease of installation and setup

The TRITON coupon test station includes AC and DC coupons and a reference cell in an integrated package that's simple to install, regardless of where the installation site is located. The RM4210 is also easy to set up – simply connect the pre-wired harness to the RMU, affix it to the top of the test station and establish communications using Bullhorn® Tools Mobile. Once the TRITON is in place, the RMU installation take just a few minutes, and you can use Bullhorn Web to apply detailed configurations from the comfort of your office.

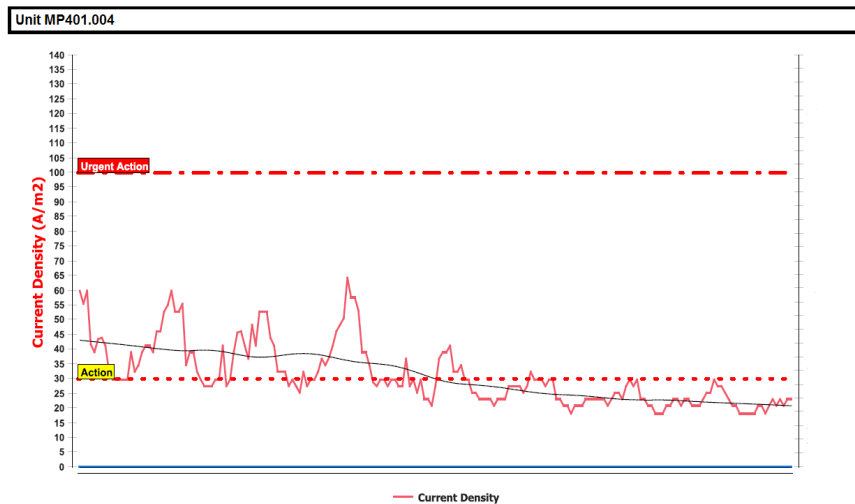
Accuracy

The RM4210 measures AC and DC voltage with one percent of reading accuracy all the way through the range with auto-calibration and auto-zero for every measurement. For example, a 1 mV measurement will be accurate within ± 10 microvolts. The TRITON uses a 1 cm² AC coupon to represent a relatively small coating holiday. It's important to use a coupon that approximates the size of the holiday so that small measurement errors are not magnified when the current density is calculated.

Mounted on top of the TRITON test station, the RM4210 measures structure-to-electrolyte AC potential and AC coupon current discharge for pipelines co-located with high-voltage AC power lines. These measurements are automatically uploaded to Bullhorn Web via satellite communication. Once uploaded, you can easily monitor induced AC voltage and current density for the affected pipeline and set threshold alarms to alert you when AC corrosion may be occurring.



The TRITON's three coupons and reference cell yield highly accurate measurements.



With easy-to-read reports and graphs, Bullhorn Web helps you monitor important risk factors like AC current density over time.

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Inputs

Readings: AC current density, DC current density, AC pipe-to-soil, DC pipe-to-soil, PCR AC current drain, instant off

DC voltage range:	±100 V
AC voltage range:	0-100 V
AC Current Range:	0-200 mA
Input impedance:	10 MΩ
Channel-to-channel isolation:	> 200 V

Instant Off

IR drop edge delay:	IR drop edge delay: 200 ms
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Configuration

Bullhorn Tools Mobile via Bluetooth low energy

Communications

SkyWave – Inmarsat satellite

Software Interface

Bullhorn Web
Mobile configuration and troubleshooting app
AI network operations center

Power Supply

Internal, field-replaceable primary and secondary batteries
3-7 year replacement when recording measurements hourly or daily with weekly transmissions
Additional DC input voltage: 10-24 V DC

Coupons

AC Coupon:	1 cm ²
Test Coupon:	100 cm ²
Native Coupon:	100 cm ²
Reference Electrode:	Stationary copper / copper sulfate

Dimensions

Test point length:	6" 6"
Test point diameter:	3"
Lead length:	30 ft.
RM4210 with a test point adapter:	6.06" W, 8.22" H, 17" circumference

Data Integrity

Data stored in nonvolatile (EEPROM) memory
Queued two-way communication (communication to the RMU is queued in Bullhorn Web and is sent the next time the unit wakes up to transmit)

Environment

Temperature:	-30° C to +70° C
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For More Information

Services

Expect relentless service from our Remote Monitoring Technical Services team.

- Technical support is provided by NACE-certified professionals via phone and email.
- Approximately 98 times out of 100, a highly-qualified professional will answer your very first phone call and handle your questions. No call backs; no phone tag.
- We set you up for success with product training, offered at your place of business or ours.

Contact

For more information, email us at remote_monitoring_sales@aiworldwide.com, call us at [800-229-3404](tel:800-229-3404), or visit us online at aiworldwide.com.

Visit aiworldwide.com for These Resources

[Bullhorn Comparison Chart](#)

About American Innovations

American Innovations (AI) protects people and the environment by helping our customers safely and efficiently manage the world's energy infrastructure. We deliver proven compliance solutions to virtually every oil and gas transmission pipeline company in North America – from the field to the office. We provide an integrated family of hardware, software and professional services backed by relentless customer service. Our products include: Bullhorn® Remote Monitoring, MicroMax® Current Interrupters, Allegro Field Data PC™, PCS™ compliance software, and Risk Intelligence Platform (RIPL™) software. AI also provides a wealth of professional services including data migration, risk analysis, high consequence area (HCA) analysis, and regulatory compliance consulting.

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