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FGRCP Universal Rectifier

CP Remote Mounting Kit

Overview:

The FreeWave® Technologies Model FGRCP Cathodic Protection remote monitoring radio is a multi-purpose, spread spectrum, board level product with specific inputs and outputs for monitoring and reporting CP operational values on pipelines, tanks, structures, and other underground facilities subject to environmental corrosion. Designed to be compatible with other FreeWave® radio products, the FGRCP is ideal for pipeline and tank companies wishing to extend their investment in telemetry automation to Cathodic Protection structures as well. The FGRCP board-level radio (shown below) is also available in a pre-assembled FGRCP Line Marker Test Station complete with solar power system, antenna and conduit mounting bracket.

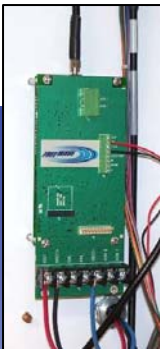
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Features:

- Refreshingly easy to buy with the best return on investment available.
- Multi-Purpose, All-in-One: CP RMU for remotely monitoring:
 - Rectifier Input Power Status
 - Rectifier Power Interruption
 - Rectifier Output Voltage
 - Rectifier Output Amperage
 - Pipe-to-Soil Test Points
 - Critical Bonds
 - Interference Points
- No Recurring Monthly Fees or Costs.
- No Licensing Fees or Costs.
- Open Protocol Communications.
- Maximum Network Security behind the Company Firewall.
- Easily integrates into existing radio networks.
- Long Range: up to 60 miles line of sight.
- Infinite Communication Repeater Capability.
- Advanced Lightning Surge Isolation.
- Industrial Grade temperature tested: -40° F to +165° F.



FGRCP
Line Marker
Test Station



FGRCP Board Level Radio

FreeWave CP Data Logger

Company Name Here
Company Address Here

Connect Print

FreeWave Cathodic Protection Remote Monitoring Unit Data Collection Software
1880 S. Flatiron Court, Suite F, Boulder, CO 80301
www.freewave.com Version 1.0 BETA 13
Automated Rectifier Interruption Measurement

Read Latest Measurements Force and Read CP Measurements

#	CP RMU Station ID Number	CP RMU Station Description	Select Devices	Rectifier Input Power Status	Rectifier Shunt Voltage (mVDC)	Rectifier Amperage	Rectifier Voltage (VDC)	Pipe-Soil Potential (mVDC)	CP RMU Temp (°F)	CP RMU Battery Voltage (VDC)	Discrete Output Control	Analog Input Value	CP RMU Polling Status	Comments
1			<input checked="" type="checkbox"/>	OFF	117.080	11.71	0.000	6.88	80.60	15.75	<input checked="" type="checkbox"/>	0.01		
2	2		<input type="checkbox"/>	OFF	117.910	11.79	0.000	225.21	89.60	15.18	<input type="checkbox"/>	0.01		
3	3		<input type="checkbox"/>	OFF	118.760	11.88	0.000	225.21	93.20	15.50	<input type="checkbox"/>	0.01		
4	4		<input type="checkbox"/>	OFF	117.800	11.75	0.000	225.74	95.00	15.45	<input type="checkbox"/>	0.01		

CP Data Logger Software (optional)

FGRCP Universal Rectifier

CP Remote Mounting Kit Technical Specifications

FGRCP Specifications	
Rectifier Output Monitoring	Voltage: 12 to + 112 VDC Current Sense: -0.156 to +0.156 VDC
Rectifier Status Monitoring	Inlet power status monitoring: 13-115 VAC
Rectifier Interruption	12 VDC, DO relay output, user selectable
Pipe-to-Soil Monitoring	Potential: -8 to +8 volt VDC
Auxiliary Discrete Output	Used for rectifier interruption or remote control of field equipment
Auxiliary Analog Input	1 to 5 VDC or 4 to 20 mA (250 ohm)
Integrated Solar Charging	12 or 24 VDC, up to 50 Watt Charging circuit and regulator, controller

Transmitter	
Frequency Range	902 to 928 MHz
Output Power	100mW to 1 Watt
Range - Line of Sight	60 miles with clear line of sight
Modulation	Spread Spectrum GFSK
Hopping Patterns	15 per Band, 105 total, user selectable
Hopping Channels	75 to 80, user selectable
Frequency Zones	16 Zones, 5 Channels per zone
Occupied Bandwidth	230 kHz
RF Connector	SMA straight, or reversed SMA, or none

Receiver	
Sensitivity	-108 dBm for BER 1x10 ⁻⁶ ; -110 dBm for BER 1x 10 ⁻⁴
Selectivity	20 dB at fc +/- 460 kHz (2nd IF)
System Gain	140 dB

Data Transmission	
Error Detection	32 bit CRC, Retransmit on error*
Data Encryption	Dynamic Key Substitution
Data Throughput	115.2 Kbps.
Data Interface	RS232 /RS 485 /RS 422 or TTL*
Data & Diagnostics Connector	Data: 10-pin, locking data and power connector. * Diagnostics: 20 pin header connector.
Antenna Connector	Board-Level Radio: SMA, threaded Line Marker Test Station: Antenna included*
Occupied Bandwidth:	230 kHz
Spreading Method	Frequency Hopping
Hopping Pattern	15 per band, 105 Total, User Selectable
Hopping Channels	50 to 112, User Selectable
Hopping Bands	7, User Selectable

Power Requirements	
Backup Power Supply	Includes an 110 VAC/DC converter, charging circuit, integral wiring and a 36 inch, 18 gauge wiring harness (cut to suit)
Battery Backup	7.5 amp-hour, gel-cell sealed deep cycle battery
Power Outage Autonomy	5-20 days (depending upon functionality)
Electrical Classification	None, Class1, Division 2 (pending)

General Information	
Operating Temperature Range	-40° C to +75° C, fully tested
Dimensions	FGRCP Radio Bracket: h 4" x w 3.5" x l 36" (cut to suit)
Weight	FGRCP Bracket & Kit: 12 pounds
Mounting	FGRCP Bracket & Kit: Integral on either side or in the top
Humidity	0 to 95% non-condensing
Recommended Accessories (shown in the FGRCP rectifier kit)	36 inch coaxial antenna whip, a bulkhead connector, 20 foot LMR 400 coaxial cable w/connectors and a 9 db YAGI antenna w/brackets.;

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FreeWave® Radios Require Professional Installation. Specifications may change at any time without notice. ©2009 FreeWave® Technologies, Inc.



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