

**The Florida West Coast  
Section of the IEEE**

Serving over 2,300 members  
in Charlotte, Citrus, DeSoto,  
Hardee, Hernando,  
Hillsborough, Lee, Manatee,  
Pasco, Pinellas, Polk, and  
Sarasota Counties



**IEEE**

**THE SUNCOAST SIGNAL**

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Volume 63—No. 10 October 2017

**IN THIS SIGNAL:**

Page 2

◆ [Seals](#)

Page 3

◆ [Renewables Task Force Formed](#)  
◆ [FREE Education from IEEE](#)

Page 4

◆ [SDN Enhances Protection Schemes](#)  
◆ [Free e-Book](#)

Page 5

◆ [Tampa Armature Works \(TAW\) Factory Tour](#)  
◆ [ITE/GE Instrument Transformer Presentation  
& Plant Tour](#)

Page 6-9

◆ [Advertising Section](#)

Page 10

◆ [Calendar](#)

**Meet the new Chair of the  
AESS/Computer Chapter**

**Ayaz Hemani** will serve as the chair of the FWCS AESS/Computer Society joint chapter, replacing Jim Cavanaugh who relocated to New York over the summer. Ayaz earned a BS in Computer Engineering from USF and is now working on an MS in Computer Science from Georgia Tech, specializing in Machine Learning. He is currently employed at Nielsen as an Innovations Lead where he is integrating technology capabilities of AI, Bots, IOT, AR/VR, and Blockchain into operational processes to drive productivity enhancements.



Ayaz Hemani  
AESS/CS Chair

Welcome, Ayaz! We look forward to many exciting AESS/CS events in the upcoming months.

**Pinellas County Waste-to-Energy  
Plant Tour**

Here is your chance to tour Pinellas County’s waste-to-energy facility, which burns up to 3,000 tons of garbage every day, conserving landfill space by reducing the garbage volume by 90% and producing up to 75 megawatts of electricity in the process. After using some of the produced electricity to run the plant, the excess—enough to power around 40,000 homes and businesses—is sold to Duke Energy. Ferrous and non-ferrous metals are also recovered and sold to smelters.

Date: Thursday October 19, 2017

Time: 2:30 PM

Location:

Cost: FREE

RSVP: <http://time2meet.com/fwcs-pes2/index.html>

Questions: Claude Pitts—[claudie.pitts@ieee.org](mailto:claudie.pitts@ieee.org)

To comply with safety regulations, closed-toe shoes are required to participate in this tour. Additional personal protective equipment (PPE) such as hard hats and safety glasses will be provided.



**Upcoming Meetings**

**EXCOM Meeting**

Tuesday, October 3, 2017 5:30PM at TECO Plaza

Register online at <http://time2meet.com/fwcs-excom/index.html>

Open to all FWCS Members

**SDN Enhances Communication-Assisted Protection Scheme**

October 12, 2017 6:30PM to 8:00PM

Details—Page 4

**Pinellas County Waste-to-Energy Plant Tour**

October 19, 2017 2:30PM

Details—Page 1

**2017 IEEE EXECUTIVE COMMITTEE - FLORIDA WEST COAST SECTION**

**CHAIR:** Claude Pitts - [claudie.pitts@ieee.org](mailto:claudie.pitts@ieee.org)

**VICE CHAIR:** Jim Cavanaugh - [James.A.Cavanaugh@ieee.org](mailto:James.A.Cavanaugh@ieee.org)

**SECRETARY:** Sean Denny - [venner20@ieee.org](mailto:venner20@ieee.org), (727) 678-0183

**TREASURER:** Jim Howard - [jhoward@ieee.org](mailto:jhoward@ieee.org), (863) 834-6585

**SIGNAL EDITORS:** Ralph Fehr - [r.fehr@ieee.org](mailto:r.fehr@ieee.org),  
Donna Howard - [amberdon3133@gmail.com](mailto:amberdon3133@gmail.com), (813) 924-2024

**AWARDS & BYLAWS :** Richard Beatie, PE - [r.beatie@ieee.org](mailto:r.beatie@ieee.org)

**MEMBERSHIP:** Jim Howard - [jhoward@ieee.org](mailto:jhoward@ieee.org), (863) 834-6585

**TEACHER IN-SERVICE:** Sean Denny - [venner20@ieee.org](mailto:venner20@ieee.org), (727) 678-0183

Computer / Aerospace & Electronic Systems (**COMP/AESS**) Joint Chapter:  
Ayaz Hemani - [ayaz.hemani@ieee.org](mailto:ayaz.hemani@ieee.org)

Engineering in Medicine & Biology (**EMBS**) Chapter: John West - [john.west@ieee.org](mailto:john.west@ieee.org),  
(727)-743-2267

Microwave Theory & Techniques/Antennas & Propagation/Electron Devices  
(**MTT/AP/ED**) Joint Chapter: Jing Wang - [jingw@usf.edu](mailto:jingw@usf.edu)

Power & Energy / Industry Applications (**PES/IAS**) Joint Chapter:  
Serge Beauzile - [serge.beauzile@ieee.org](mailto:serge.beauzile@ieee.org), (863) 834-6511

Robotics & Automation (**RAS**) Chapter: Sean Denny - [venner20@ieee.org](mailto:venner20@ieee.org),  
(727) 678-0183

Signal Processing / Communications (**SP/COMM**) Joint Chapter: Paul Belussi -  
[paul.belussi.us@ieee.org](mailto:paul.belussi.us@ieee.org)

**WOMEN IN ENGINEERING** Affinity Group: Valerie Tur, (813) 334-2317,  
[VLT4@cornell.edu](mailto:VLT4@cornell.edu)

**LIFE MEMBER** Affinity Group: Glen Cock - [gcock@tampabay.rr.com](mailto:gcock@tampabay.rr.com), 813-689-4765

**YOUNG PROFESSIONALS:** T.J. Ross - [anthonyross@mail.usf.edu](mailto:anthonyross@mail.usf.edu), (505) 620-7734

**PACE:** Jim Anderson - [jim.anderson@ieee.org](mailto:jim.anderson@ieee.org), (813) 425-2467

**CONSULTANTS NETWORK:** Herman Amaya - [hamaya@tampabay.rr.com](mailto:hamaya@tampabay.rr.com)

**STUDENT BRANCH MENTOR:** Jim Howard - [jhoward@ieee.org](mailto:jhoward@ieee.org), (863) 834-6585

**USF STUDENT BRANCH ADVISORS:**

Dr. Paul Schnitzler - Student Branch Co-Advisor - [pauls@usf.edu](mailto:pauls@usf.edu), (813) 974-5584

Dr. Andrew Hoff - Student Branch Co-Advisor - [hoff@usf.edu](mailto:hoff@usf.edu)

Dr. Ralph Fehr - PES/IAS Chapter Advisor - [r.fehr@ieee.org](mailto:r.fehr@ieee.org)

**STUDENT BRANCH / CHAPTERS:**

USF Student Branch - Ivan Chekerov - [ichekere@mail.usf.edu](mailto:ichekere@mail.usf.edu)

USF Computer Society Chapter - Felipe Souza - [fillipe@mail.usf.edu](mailto:fillipe@mail.usf.edu)

USF Microwave Theory & Techniques Chapter - Eduardo Rojas - [eduardor@mail.usf.edu](mailto:eduardor@mail.usf.edu)

USF Power & Energy/Industry Applications Chapter - Oscar Ayala-Gonzalez -  
[oscar@mail.usf.edu](mailto:oscar@mail.usf.edu)

**CONFERENCES:** Richard Beatie, PE - [r.beatie@ieee.org](mailto:r.beatie@ieee.org)

**WEB PAGE:** <http://sites.ieee.org/fwcs/>

**WEB MASTER:** Herman Amaya [hamaya@tampabay.rr.com](mailto:hamaya@tampabay.rr.com)

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due in electronic form by 1st Sunday after the 1st Tuesday of the month preceding the issue month.

Address all correspondence to:

Donna Howard

3133 W Paris Street Tampa, FL 33614-5964

Home Phone: (813) 876-1748 E-mail: [amberdon3133@gmail.com](mailto:amberdon3133@gmail.com)

The Signal, Copyright © 2017

**Useful links:**

<http://www.ieee.org/benefits> Global Benefits Finder

<http://www.ieee.org/discounts> Discounts Page



## PE Corner

Art Nordlinger, PE, Senior Member  
**Seals**



No, not the aquatic mammal or the singer. I'm talking about the subject of Chapter 61G15-23 FAC, Seals. This chapter begins, "A professional engineer shall sign, date and seal..." and goes on to discuss things like plans, specifications and documents that need this treatment, and those that don't. I think I can make a generalization that a PE either does this a lot as part of their practice, or rarely if ever. There isn't much middle ground.

This section of the Board's rules was recently updated to keep up with technology. Recognizing that plans are now often managed and transmitted in electronic form (versus just paper), secure methods needed to be devised to electrically or digitally sign and seal documents. And then the rules needed to be updated to allow for these methods. As is often the case, the devil is in the details of insuring that this can be accomplished securely, but without making it overly cumbersome. Not surprisingly, the Board has then had to address numerous questions regarding this process. If you are interested in the details there was a very good explanation in the Board's October 2016 newsletter, which is available online on the Board's website.

Getting back to my generalization, those who sign and seal documents regularly are like-as-not well aware of these changes as it directly affects their daily business. And for those whose seal is mostly unused, somewhere in the back of a drawer collecting dust, this change may be mostly irrelevant.

However, the seal rules have evolved over time and it is important that all PEs are aware of certain details. For one, in 2006 the Board standardized the text on an embossing seal and retired some text. Currently, all seals have the words "PROFESSIONAL ENGINEER" and "LICENSE" on them. Before 2006, some seals used the words "REGISTERED ENGINEER" and "CERTIFICATE". These seals are no longer valid for use.

Those who rarely use their seals (I'm in that group) may sometimes have occasion to seal a recommendation for a new engineer applying for licensure. If you have an old seal and may use it for this, unfortunately, the Board will reject the recommendation since it is sealed with an invalid seal. If your seal was made before 2006 and you aren't sure what text is on it, take this opportunity to check it and get it updated if necessary. It could save you some future heartburn.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trends in the profession, IEEE has seminars that will meet your needs. Better start earning those CEHs now!



## *IEEE PES, NERC Form Renewables Task Force*

The IEEE Power and Energy Society (PES) in cooperation with North American Electric Reliability Corporation (NERC) has started a task force to look into the impact of large penetration of inverter-based resources on the power system. This includes both impacts on short-circuit current availability and other dynamic performance issues as a consequence.

By the second quarter 2018, the task force will produce an industry guidance document that will identify, define the issues and impact of having large penetrations of inverter based-resources on the power system with a longer range scope to develop standards, guides and technical papers to help guide the power industry as more wind and solar energy is being deployed.

The task force is led by Kevin W. Jones (Co-Chair), XCEL Energy, from the PES Power Systems Relaying and Control Committee (PSRC) and Pouyan Pourbeik (Co-Chair), Power and Energy, Analysis, Consulting and Education, PLLC, from the PES Power Systems Dynamic Performance Committee (PSDP), along with Gary Kobet (Vice-Chair), TVA from the PSRC. The task force reports to the PES Technical Council.

The team is made up of several representatives from utilities, manufacturers, consultants and NERC. The initial phase of this work is expected to be completed shortly. Please watch for calls for participation in the months ahead on the formation of the working groups that will be creating these standards, guides and technical papers.

For more questions about IEEE PES, contact Miriam P. Sanders at [m.p.sanders@ieee.org](mailto:m.p.sanders@ieee.org). For more information about NERC priorities and initiatives, contact Kimberly Mielcarek at [kimberly.mielcarek@nerc.net](mailto:kimberly.mielcarek@nerc.net).



## *IEEEEx — Free Online Courses from IEEE*

One of the many benefits of IEEE membership is access to Massive Open Online Courses (MOOCs) provided by IEEE and edX, a leading provider of online learning based in Cambridge, Massachusetts, and governed by Harvard and the Massachusetts Institute of Technology. These courses can be audited for free, or students can choose to receive a verified certificate for a small fee.

The list of courses offered is growing. As of now, ten courses are available:

- From Goddard to Apollo: Part 1—The Rockets' Red Glare
- From Goddard to Apollo: Part 2—The History of Rockets
- So You Want to Become a Biomedical Engineer
- Open Education and OERs Repositories
- Innovation and Competition: Succeeding through Global Standards
- Introduction to Data Storage and Management Technologies
- Smart Grids: Electricity for the Future
- Introduction to the National Electrical Safety Code (NESC)
- Stuff You Don't Learn in Engineering School
- Introduction to Systems Biology

What are you waiting for? Enroll in one of these outstanding courses today for free at:

<https://www.edx.org/school/ieeex>

## *IEEE Standards University*

A great way to become familiar with IEEE standards is to participate in courses and workshops offered through IEEE Standards University. An E-Magazine and videos are also offered to help members become familiar with the world's largest body of technical standards.



Check out what is offered by IEEE Standards University at the following URL:

<https://www.standardsuniversity.org/>



**IEEE**  
*Signal Processing Society*

**IEEE**  
**ComSoc**<sup>TM</sup>  
IEEE Communications Society

## *Software-Defined Networking Enhances Communication-Assisted Protection Scheme*

**Date:** Thursday, October 12, 2017  
**Time:** 6:30pm—8:00pm  
**Location:** 7887 Bryan Dairy Rd.—Largo, FL 33777 (Largo STAR Center, corner of Bryan Dairy and Belcher)  
**Cost:** FREE  
**RSVP:** Online at: <https://events.vtools.ieee.org/m/46670>  
**Questions:** Paul Belussi, Schweitzer Engineering Laboratories, Inc.,  
[paul\\_belussi@selinc.com](mailto:paul_belussi@selinc.com)



There is considerable interest in the potential advantages that software-defined networking (SDN) brings to the real-time power utility networks in terms of fast healing, more deterministic latencies, and deny-by-default security. This presentation reviews the communication channel performance requirements for communication-assisted protection schemes and explains the challenges of using Ethernet for teleprotection applications. You will learn how SDN can be used to provide a breakthrough solution that solves the limitations of using Ethernet for mission-critical services within the substation.

### *Free E-Book*

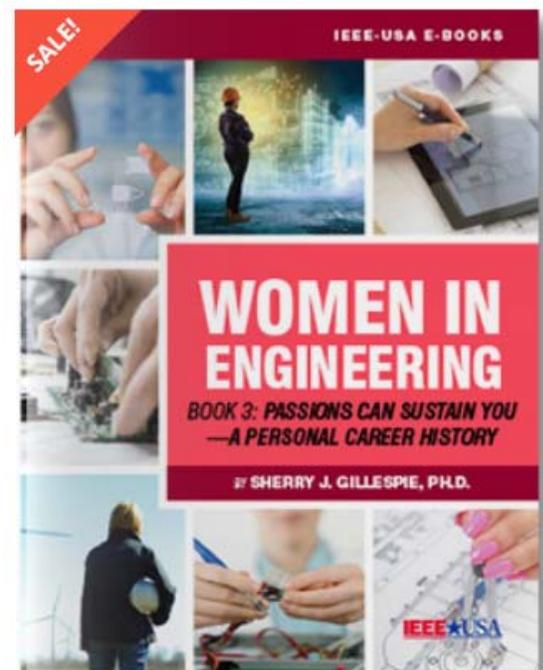
*Women in Engineering – Book 3: Passions Can Sustain You—A Personal Career History*  
 by Sherry J. Gillespie, Ph.D.

Members: \$7.99 **FREE!**

Non-Members: \$9.99

Now through 15 October, IEEE members can download a free copy of this eBook by adding it to your cart and using promo code SEPTFREE17 at checkout.

Author Sherry Gillespie, is currently a technology management consultant in Washington, D.C. A past IEEE-USA Congressional Fellow, Gillespie shares her career journey: stints as a high school physics teacher; extraordinary opportunities to lead cross-organizational, as well as international, technology programs; and five years serving on the Board of Directors of a major industry consortium. An active IEEE-USA volunteer, Gillespie also shares her career challenges, and the lessons she learned along the way.



 IAS IEEE INDUSTRY APPLICATIONS SOCIETY		 IEEE PES Power & Energy Society™
<b>Tampa Armature Works (TAW) Factory Tour</b>		

**Date:** Friday, November 10, 2017      **Time:** Noon – 3PM      **Location:** 440 South 78<sup>th</sup> Street, Tampa, FL 33619

**Cost:** \$10 Members, \$20 Non-Members, \$5 IEEE Student Members

**RSVP:** Online at: <http://time2meet.com/fwcs-meetings/>  
Make checks payable to: IEEE FWCS  
Send checks to: **Jim Howard, IEEE FWCS Treasurer**  
3133 W. Paris Street  
Tampa, FL 33614-5964

**Questions:** Tom Blair at 813-228-1111, ext 34407 or [thblair@tecoenergy.com](mailto:thblair@tecoenergy.com)

IEEE invites you to a Tour of the TAW Motor Repair Facility in Riverview, Florida.

Tampa Armature Works Inc. is a family of integrated power solution providers. TAW has been providing design and repair services for electric motors, generators, transformers, pumps, drives, metal clad switchgear, metal enclosed switchgear, and all rotating apparatus since 1921. If it spins, turns, or rotates, chances are TAW has seen it and repaired it.



TAW provides portable generator servicing, custom engineered switchgear, generator packaging, power controls and automation to power distribution equipment, motor repair, and service of all kinds of equipment — including wind and nuclear power.

This will be a great opportunity to discuss with the experts any motor control problems you may have had in the past with large motors or drives, as well as see the up-to-date equipment located at this TAW facility.

## **ITI/GE Instrument Transformer Presentation and Plant Tour**

**Date:** Friday, December 8th      **Time:** Presentation begins at 2:30 PM followed by the Tour!

**Cost:** Free for Members, \$10 Non-Members and \$5 for Students  
Make checks payable to IEEE FWCS and mail a check in advance to IEEE PE/IA Chapter Treasurer:  
**Jim Howard**  
3133 W Paris Street  
Tampa FL 33614-5964

**Speaker:** Claudio Morejon | Southeast Sales Manager for ITI/GE Instrument Transformers

**Location:** GE Plant; 1907 Calumet Street, Clearwater FL 33765

**RSVP:** Online at: <http://time2meet.com/fwcs-pes2/index.html>

Space limited to the first 45 registrants!!!

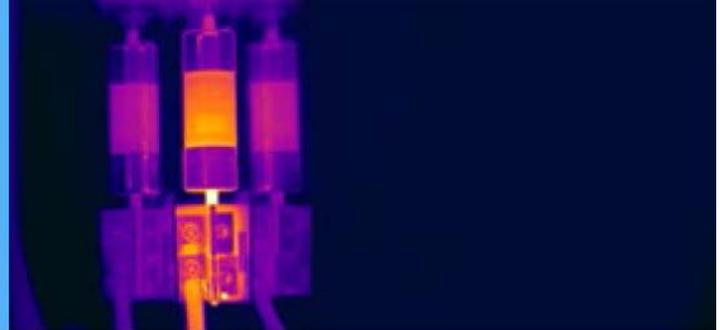
**Questions:** Steve Antman at 863 701-4170 or [steveantman@gmail.com](mailto:steveantman@gmail.com)

## Advertising Section



# Get your Level I or II Infrared Certification today.

### Infrared Electrical Certification



## Level I and Level II Infrared Electrical Certification Courses

The 3-day courses are focused on industry specific topics related to electrical applications! Typical infrared courses teach attendees multiple IR applications; we focus on what we do best: the electrical application of infrared.

### Level I Infrared Certification - \$749.00

Course Level: **Beginner**

Prerequisites: **None**

**Overview:**

- Understand basic infrared camera setup (using ANY brand and model)
- Understand the fundamentals of infrared
- Understand thermography
- Understand heat transfer
- Understand electrical applications
- Understand software and reporting (using ANY brand of camera)

### Level II Infrared Certification \$749.00

Course Level: **Intermediate**

Prerequisites: **Level I Certification Course**

**Overview:**

- Learn How to Perform Heat Transfer Calculations
- Understand Infrared Spectrum/Planck's Law
- Understand Radiosity Problems
- Understand Emissivity / Reflectivity
- Learn to Calculate Transmissivity
- Understand Resolution Tests
- Understand How to Quantifying Measurements
- Understand Importance of Reporting and Documentation

## Level I or Level II with IRISS Certified Installer Training - \$999.00

This 1-day training can be added to your Level I or Level II certification class. This course allows students to learn how to use IR windows and ultrasound ports correctly. From installation to calculating emissivity/transmissivity, this course is designed to provide the hands-on experience to confidently install and use IRISS IR windows and ultrasound ports. As an IRISS Certified Installer, you will know the critical steps needed to efficiently perform surveys on electrical components while using IR windows.

**Overview:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Full Understanding about safety around electrical cabinets</li> <li>• Understanding IR inspections for electrical maintenance</li> <li>• Introduction to ultrasound for electrical testing</li> <li>• Understanding of IR windows and ultrasound ports</li> </ul> | <ul style="list-style-type: none"> <li>• Overview of IRISS custom IR window solutions</li> <li>• How to install IRISS product lines</li> <li>• Understanding the importance of tagging and asset management</li> </ul> |
|--|--|

### Dates

Level I - October 2-4 2017  
Level II - September 11-13 2017

### Place

IRISS Headquarters  
10306 Technology Terrace,  
Bradenton, FL 34211

### Contact

training@iriss.com  
941-907-9128

## Advertising Section

REV 1.26.17

**URC** Utility Relay Company

# AC-PRO-II®

## MICRO-CONTROLLER BASED TRIP UNIT

The AC-PRO-II® is 55% smaller & includes more features than its predecessor. In addition to standard functions of Long-Time, Short-Time, Instantaneous and Ground Fault

The AC-PRO-II® includes:

- Neutral overload
- Under-voltage alarm/trip
- Over-voltage alarm/trip
- Time stamping of events
- Patented Sluggish Breaker® detection
- Wave form capture
- Configurable alarm relay

### Completely Backwards Compatible

The CTs, actuators, and wiring harness from the original AC-PRO® can be used with the AC-PRO-II®.

### Communications

RS485 Modbus RTU communications is standard.

### Programming

Settings are programmed using the OLED multi-line display and "smart" buttons that change their function according to the information displayed. All of the settings are entered using simple parameters (no percentages or multipliers required).

### OLED Multi-Line Display

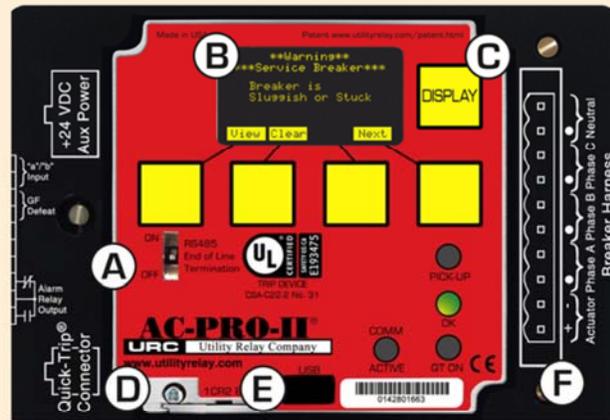
The easy to read multi-line display provides real time monitoring of 3-phase, neutral, and ground fault currents. The display unit can be rotated to allow the trip unit to fit in a variety of different breaker configurations.

### Last Trip Data

The trip units retain all of the trip data for the last 8 trip events. This data includes the date, time stamp & waveforms of each event using the integrated real-time clock.

### USB Port

The electrically isolated front mounted USB port allows for easy access of trip data and protection settings. It can also be used to upload the trip unit settings, making commissioning the trip unit much faster.



- A** RS485 MODBUS RTU COMMUNICATIONS IS STANDARD
- B** EASY TO READ OLED MULTI-LINE DISPLAY
- C** DISPLAY CAN BE ROTATED FOR VARIOUS INSTALLATION OPTIONS
- D** QUICK-TRIP® ARC FLASH REDUCTION READY
- E** ELECTRICALLY ISOLATED USB CONNECTOR
- F** THE ORIGINAL AC-PRO® ACTUATOR & HARNESS CONNECTION



### Self-Test OK Feature

The green LED indicates that the trip unit is operating properly. This feature:

- Continuously monitors the trip unit
- Verifies that the actuator is connected
- Monitors the software routines
- Monitors the micro-controller

### 50 Hz or 60 Hz Operation

The AC-PRO-II® is user selectable for 50 Hz or 60 Hz applications.

### Construction

- Conformal coated circuit boards
- Contamination resistant membrane keypad
- All metal nickel plated enclosure

### Warranty

All AC-PRO-II®s come with a 2-year limited warranty.

888.289.2864 | UTILITYRELAY.COM | URCSALES@UTILITYRELAY.COM



*Advertising Section*

# One Product, Over 300 Applications

Choose the Only Fully Automated, Portable & Scalable Remote Racking System

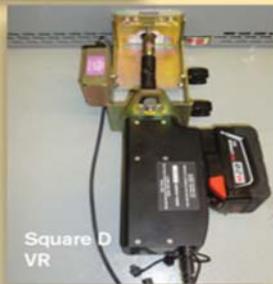


Cutler Hammer  
VCP-W

Why deal with the operating challenges and high maintenance costs of a clumsy, stationary remote circuit breaker racking system? Protect your people and assets with the compact, portable, scalable, and universal Safe-T-Rack® solution.

Installed in all 50 states, Remote Solutions' patented system offers:

- Best-in-class choice for Power Utilities, Mining, Petrochemicals, Transportation, etc.
- Compatible with low and medium voltage switchgear (480V to 38kV)
- Alternative to arc flash protection garments
- Mitigates hazards per NFPA 70E
- Working distance up to 150 feet
- Eliminates risk of misalignment and damage to switchgear
- Easy to install, operate and maintain
- Two-year warranty standard, extended warranties available



Square D  
VR



Westinghouse  
DS



ABB / ITE  
HK



**Distance is the Best Arc Flash Protection™**

Contact us today for a hands-on demo at your site




**SAFE-T-RACK**  
By Remote Solutions, LLC

[www.safe-t-rack.com](http://www.safe-t-rack.com)  
[sales@safe-t-rack.com](mailto:sales@safe-t-rack.com)  
(520) 628-4378

Proudly Made in the U.S.A.



### Advertising Section



863-425-2698

[www.eesllcfl.com](http://www.eesllcfl.com)

**ELECTRICAL ENGINEERING SERVICE**  
**DESIGN/BUILD**  
**INDUSTRIAL & COMMERCIAL**  
**MAINTENANCE & CONSTRUCTION**  
**INSTRUMENTATION & CONTROLS**  
**ARC FLASH ASSESSMENTS & TRAINING**  
**INFRARED TESTING**  
**ELECTRICAL TESTING SERVICES**



formerly **Leedy Electric East, LLC**



### Suncoast Signal Advertising Rates

Size	One Month		6 Months		12 Months	
	Member	Non-Member	Member	Non-Member	Member	Non-Member
<b>Business Card</b>	\$25	\$33	\$120	\$150	\$210	\$252
<b>¼ Page</b>	\$40	\$52	\$190	\$238	\$335	\$402
<b>½ Page</b>	\$75	\$98	\$360	\$450	\$630	\$756
<b>¾ Page</b>	\$110	\$143	\$530	\$663	\$925	\$1,110
<b>Full Page</b>	\$140	\$182	\$670	\$838	\$1,175	\$1,410
<b>Insert / Sheet</b>	\$200	\$260	\$800	\$1,000	\$2,000	\$2,400

#### Powers and Company, Inc.

Power Transformer and High Voltage Switchgear Experts  
 Delta Star Power Transformers  
 Powell Distribution Switchgear  
 Unifin Transformer Coolers  
 Cardinal Transformer Oil Pumps

**Dick Powers**  
**(813) 282-3011**  
**(813) 760-2556 Mobile**

#### Blue Elephant Consulting

*Unforgettable communication skills that will set your ideas free...*



**Dr. Jim Anderson** [jim@BlueElephantConsulting.com](mailto:jim@BlueElephantConsulting.com)  
**President** Phone: 813.418.6970  
[www.BlueElephantConsulting.com](http://www.BlueElephantConsulting.com)

P.O. Box 341734, Tampa, Florida 33694-1734

Your advertisement here reaches over 2300 members in the local area!



*Florida West Coast Section, Tampa*

NON PROFIT ORG  
U.S. POSTAGE PAID  
TAMPA, FL. PERMIT  
No. 1197

**DATE SENSITIVE MATERIAL. DO NOT DELAY**

Change of address? IEEE Web Contact Update <http://www.ieee.org/membership/coa.html>  
Or send address changes including your name, IEEE Member number and all pertinent information to:  
IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333  
Or fax your address changes to (732) 562-5445

**October 2017 Calendar of Events (For more information see P. 1) in this Signal...**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 <i>EXCOM Meeting 5:30 TECO Plaza</i>	4	5	6	7
8	9	10	11	12 SDN Protection Details—P. 4	13	14
15	16	17	18	19 Pinellas Waste-to- Energy Details—P. 1	20	21
22	23	24	25	26	27	28
29	30	31  <i>Happy Halloween</i>				