



ASPEN LEAFLET

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In This Issue

[Vendor Specific Distance Relay Methods](#)

[Windows 7 Compatibility](#)

Upcoming Events

[Please visit our website for details on the following events.](#)

- *OneLiner* class in Madrid, Spain, on November 24-26, 2009. This class will be taught in Spanish. Please visit the Events page of www.aspeninc.com for details.
- Advanced *OneLiner* class in San Francisco, on February 23-25, 2010. Please visit the Events page of www.aspeninc.com for details. You can also sign up on-line there.
- Booth in the T&D Conference and Exposition in New Orleans on April 19-22, 2010. Please visit

Vendor Specific Distance Relay Methods

We introduced a new class of distance relay methods a year ago to simulate in detail the internal workings of specific make and model of distance relays. We call these “vendor-specific methods”. You can easily tell a vendor-specific method by its name, which always ends with the two underscore characters.

Vendor specific models for SEL-311, SEL-321, and SEL-421 distance relays were the first ones we created in *OneLiner* v10. In these methods we modeled SEL’s unique way of implementing positive-sequence polarized mho characteristic, compensator-distance mho characteristic, quadrilateral characteristic, negative- and zero-sequence voltage directional logic, and load encroachment settings. We were encouraged by reports from users that these relay models closely emulated the response of actual SEL relays in single-pole switching and other advanced applications.

We have since added a number of vendor-specific models from different manufacturers. The following is a complete list of these models to date, in *OneLiner* v11:

- SEL-311P__, SEL-311G__, SEL321P__, SEL321G__, SEL-421P__, and SEL-421G__.
- D60P__, D60G__, D90P__, D90G__, L60P__, L60G__, L60P__, L60G__: These methods are for GE D60, D90Plus, L60 and L90 line protection distance relays.
- REL521P__, REL521G__, REL531P__, REL531G__: These methods are for Siemens REL521 and REL531 distance relays.
- P437__, P443P__ and P443G__: These methods are for Areva P437 and P433G distance relays.

Details of these models are available in the on-line help for the Distance Relay Editor. (Execute the Help | DS Relay Editor Help

www.ieeet-d.org for more information on this show.

New Users Since August 2008

ASPEN OneLiner

- Alpine Products Ltd., N. Vancouver, BC, Canada
- AMM Guatemala, Guatemala
- ControlPoint Technologies, Inc., Rockland, MA
- Dashiell LLC, Houston, TX
- E.ON U.S., Lexington, KY
- EDEMET, S.A., Ciudad de Panama, Rep. of Panama
- Eugene Water & Electric Board, OR
- Fiber Fusion, Inc., Lead, SD
- Ho Chi Minh City Power Co., Vietnam
- Iowa State University, Ames, IA
- K.R. Saline and Associates, PLC, Mesa, AZ
- Kansas City Power and Light, MO
- LIGHT Servicos de Eletricidade, Rio de Janeiro, RJ, Brazil
- Los Alamos National Lab., NM

Contents command in *OneLiner* and look in Section 2.)

OneLiner handles the vendor-specific methods differently from the generic distance-relay methods (such as “Mho” and “Quad”):

1. The setting-parameter names of a vendor-specific method are exactly the same as those of the physical relay. This saves the work of translating between the setting parameters in *OneLiner* and the actual physical setting parameters of the relay. In addition, this feature simplifies the logistics of transferring setting parameters between *OneLiner* and *Relay Database*.

2. Unlike the generic methods, you cannot use the Distance Relay Editor to create “types” based on the vendor-specific methods. All the modeling parameters of vendor-specific methods are “hard wired” within the main *OneLiner* executable file. For each vendor-specific method available, *OneLiner* automatically creates a relay type internally with the exact same name when the program starts.

3. In the distance-relay dialog box, the parameters data grid expands and contracts depending on the number of zones you specified and the features you enabled or disabled. See Figure 1.

We are committed to create a comprehensive collection of vendor-specific relay methods in future versions of *OneLiner*. As part of this effort, we plan to re-write existing distance-relay methods “RAZOA”, “REL316”, “7SA511”, “7SA513” and others as vendor-specific methods. The updated methods will use vendor-specific parameter names and will have more accurate polarization and load-encroachment logic than the existing models.

We welcome your feedback on the vendor-specific models. We also welcome inputs on which vendor-specific relay methods you want to see implemented in *OneLiner*.

- Lubbock Power & Light, TX
- Maritime Electric Co., Charlottetown, PE, Canada
- Midwest Energy, Inc., Hays, KS
- MRLA, Inc., Stilwell, KS
- NB Power Transmission Corp., Fredericton, NB, Canada
- P&E Engineering Co., Carlisle, IA
- PDS Consulting, PLC, Tempe, AZ
- Point Comm Inc., Mississauga, ON, Canada
- Power Consulting Engineers, Lilburn, GA
- Power Grid Engineering, LLC, Winter Springs, FL
- Quanta Technology, Raleigh, NC
- Rising Edge Engineering Ltd., Calgary, AB
- RLC Engineering, Augusta, ME
- Rushmore Electric Power Coop., Rapid City, SD
- Shermco Industries, Inc., Irving, TX
- Sierra Southwest Coop., Benson, AZ
- Soluciones PCIM SA DE CV, Zapopan, Jalisco, Mexico
- Springfield Utility Board, Springfield, OR

Distance Phase Relay On:

6 NEVADA 132.kV - 8 REUSENS 132.kV 1L

ID= GE1 Type: D60P [Change Type...](#)

PT at: 6 NEVADA 132.kV

Zone 2 supervision

☐ Start Z2 timer on forward Z3 or Z4 pickup

Signal-only zones= 0
(Example: 2,3-5)

Memo:

Relay Database
Linked relays=

[...](#) [+](#) [-](#) [Store Settings](#) [Retrieve Settings](#)

Tags: [None](#)

[Line Impedance](#) [OK](#) [Cancel](#) [Help](#)

Last changed Nov 03, 2009

Parameter	Value
PT ratio	100
CT ratio	600.5
DS Z1 Function (E/D)	0
DS Z2 Function (E/D)	0
DS Z3 Function (E/D)	0
DS Z4 Function (E/D)	0
DS Z5 Function (E/D)	0
Load Encl. (E/D)	0
PT nom.sec. Voltage (V)	64.4
CT nom.sec.Amp (1A, 5A)	1.0
Memory Duration (Cycles)	10.0

Fig. 1a: Info dialog box for a GE D60 relay, when all the zones are disabled.

- Umatilla Electric Coop.,
Hermiston, OR
- ZE Power Engineering,
Inc., Richmond, BC,
Canada

ASPEN Power Flow

- E.ON U.S., Lexington,
KY
- EDEMET, S.A., Ciudad
de Panama, Rep. of
Panama
- Henville Consulting,
Delta, BC, Canada
- Los Alamos National
Lab., NM
- Manitoba Hydro,
Winnipeg, MB, Canada
- Midwest Energy, Inc.,
Hays, KS
- PROT.A.S.I.S. SA,
Athens – Hellas, Greece
- Public Service Electric &
Gas, Newark, NJ
- PwrSolutions, Inc.,
Dallas, TX
- Umatilla Electric Coop.,
Hermiston, OR

ASPEN DistriView™

- E.ON U.S., Lexington,
KY
- City of Glendale, CA
- EDEMET, S.A., Ciudad
de Panama, Rep. of
Panama
- HDR Engineering,

Distance Phase Relay On:

6 NEVADA 132.kV - 8 REUSENS 132.kV 1L

ID= GE1 Type: D60P Change Type...

PT at:
6 NEVADA 132.kV

Zone 2 supervision

☐ Start Z2 timer on forward
Z3 or Z4 pickup

Signal-only zones= 0
(Example: 2,3-5)

Parameter	Value
PT ratio	100
CT ratio	600.5
DS Z1 Function (E/D)	E
DS Z2 Function (E/D)	D
DS Z3 Function (E/D)	D
DS Z4 Function (E/D)	D
DS Z5 Function (E/D)	D
DIR Z1 (R/F/N)	F
Z1 Shape (M=Mho,Q=Quad)	Mho
Z1 Reach	2.0
Z1 RCA	85.0
Z1 Comp Limit	90.0
Z1 Dir RCA	85.0

Memo:

Relay Database

Linked relays=

... + - Store Settings Retrieve Settings

Tags: None

Line Impedance OK Cancel Help

Last changed Nov 03, 2009

Fig. 1b: Info dialog box for a GE D60 relay, after zone 1 is enabled.

Windows 7 Compatibility

ASPEN programs shipped after November 1, 2009, are all Windows 7 compatible. Please write to support@aspeninc.com (or scayres@aspeninc.com in Spanish or Portuguese) if you have questions.

Billings, MT

- Hawaiian Electric Light Co., Hilo, HI
- Schweitzer Engineering Lab., Pullman, WA

ASPEN Relay Database™

- E.ON U.S., Lexington, KY
- Los Alamos National Lab., NM
- Midwest Energy, Inc., Hays, KS
- Public Service Electric & Gas, Newark, NJ

ASPEN

Line Constants Program™

- E.ON U.S., Lexington, KY
- Henville Consulting, Delta, BC, Canada
- Hyundai Engineering & Construction Co., Englewood Cliffs, NJ
- Iberdrola Ingenieria y Construcccion, S.A, Madrid, Spain
- ITC Transmission, Novi, MI
- Lubbock Power & Light, TX
- Memphis Light, Gas & Water Div., TN
- PDS Consulting, PLC, Tempe, AZ
- Quanta Technology, Raleigh, NC

- Soluciones PCIM SA DE
CV, Zapopan, Jalisco,
Mexico
- Stanley Consultants,
Inc., Muscatine, IA
- Utility System
Efficiencies, Inc.,
Carmichael, CA
- Viasyn, Inc., San
Ramon, CA
- Wisconsin Public
Service Corp., Green
Bay, WI

ASPEN Inc., 34 N. San Mateo Drive, San Mateo, CA 94401 USA | 650-347-3997

aspen@aspeninc.com | www.aspeninc.com

Office Hours: Monday through Friday, 9 a.m. to 5 p.m. Pacific Time
(GMT-7 in the summer, and GMT-8 in the winter).

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