



## Basic Electrical Motor Controls

&

## VFDs Course

**May 16, 2018**

**St. John's, NL**

### **Objective:**

To provide the water and wastewater personnel with a basic understanding of basic electrical theory, introduction to motor controls, VFDs and safety practices.

### **Basic Electrical Terms, Definitions & CEC**

- What is electricity
- Voltage; Amperage/Current; Resistance; Power/Watts/Kilowatts; Horsepower; Torque
- CEC – Definitions; overview of Sections and Tables

### **Ohm's Law & Misc. Formulas**

- Use Ohm's Law to determine Voltage, Amperage, Resistance, Power in a circuit
- Practice several formulas to determine power usage in a circuit/motor

### **Multi-meters & Meggers**

- Multimeters... Voltage Testers; Ohmmeters; Current Meters
- Meggers
- Hands-on

### **Motors, Motor Starters, Soft Starters, VFDs**

- Understanding basic construction of three phase motors
- Determining the proper operation of three phase motors
- Overview of Contactors / Overloads / Starters (Auxiliary Contacts, Coils, etc)
- Introduction & overview to Soft Starters
- Introduction & overview to VFDs
- Static displays of Motor Controls, Soft Starters & VFDs
- VFD demonstration with programming of parameters

### **Applications & Troubleshooting**

- Review various Applications
- Common causes of faults
- Nuisance tripping of Motor Controls
- Preventative Maintenance
- Knowing when to bring in the experts

### **Electrical Safety**

- Proper PPE
- LOTO – Lock Out Tag Out
- Knowing how to protect yourself and others
- Understanding the dangers of electricity
- Knowing your limits

### **PRESENTER:**

Dave Galbraith- Samson Equipment

**COURSE FORMAT:**

Every attempt is made to keep the course informal and an enjoyable day-long training experience. Registration starts at 8:00 am, and the instructor will start shortly after 8:30. Wrap-up time is usually around 4:00 pm. Though all workshops are non-smoking, ample breaks are provided for coffee and discussion.

**CONTACT INFORMATION:**

Registration can be made by faxing or mailing the registration form on the reverse of this page, or on-line at [www.acwwa.ca](http://www.acwwa.ca). For further information, please contact ACWWA Section office at 902-434-6002.

**COURSE LOCATION:**

Fairfield Inn & Suites by Marriott St. John's  
199 Kenmount Road, St. John's, NL A1B 3P9

**Basic Electrical Motor Controls & VFDs Course**  
May 16, 2018 St. John's, NL

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City, Province: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

ACWWA Membership No: \_\_\_\_\_ WEF Membership No: \_\_\_\_\_

If no membership number is listed, you will be invoiced as a non-member. See pricing below.

**Fee for ACWWA or WEF Members & Employees of UTILITY Members**

Course: \$250.00 + \$37.50 HST = \$287.50

**Fee for Non – Members**

Course: \$275.00 + \$41.25 HST = \$316.25

Fees include coffee breaks. Lunch on your own.

**Invoices will be sent to the address listed above.**

PO number to be included on the invoice \_\_\_\_\_

**Payment can be made by Visa, Master Card or cheque.**

Card Holder's

Name \_\_\_\_\_

Credit Card Number \_\_\_\_\_ Expiry \_\_\_\_\_

Signature \_\_\_\_\_

Email address for credit card receipt \_\_\_\_\_

Cheques should be made payable to:  
**ACWWA**  
PO Box 28141 · Dartmouth, NS · B2W 6E2  
Phone 902-434-6002 Fax 902-435-7796