CHAR SYSTEM
OPERATION & TRAINING

Module 7

Current-to-voltage (IV) Testing Tutorial

LEARNING OBJECTIVES

- Introduction to Current to Voltage (IV) curve testing
  - Measure and test leakage current of cables or detectors
  - Proper test configuration for IV curves
  - Configure WinCharm for IV curve testing
  - Evaluate IV data for detector health diagnosis
- At the conclusion of this section, the students will be familiar with application and analysis of the IV curve test

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OUTLINE

- Create or configure Equipment Identifier (EID)
- Test preparation and connections
- Data analysis/review
- Discussion

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SAFETY

- The CHAR System IV port is capable of outputting 5 – 2500 V DC in 1 V increments and has a 5 mA current limit
- Plant Safety precautions must be observed similar to IR testing
- Discharge cables before and after testing, using a bleed resistor (100k to 1 Mohm)
  - To dissipate charge accumulation from cable and detector capacitance

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IV CURVE TEST USES HV PORTS

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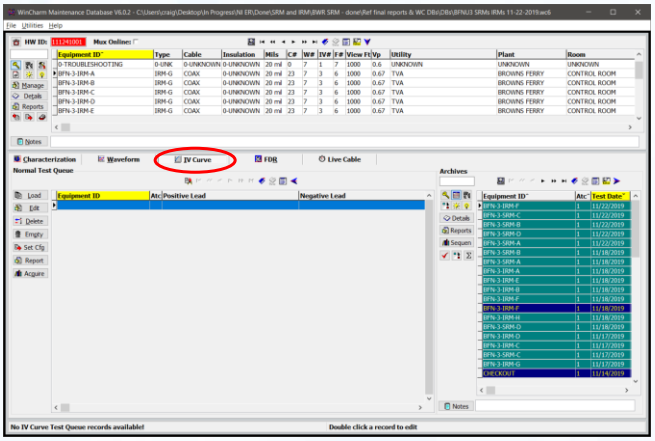
IV CURVE TESTING

The IV Curve tab must be selected in the WinCharm software



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SELECTING OR CREATING AN EID

- Creating an Equipment ID was covered in Module 2, WinCharm V6 Operation
- IV Curve Sequence information located in the WinCharm Equipment ID Management
- Sequence Number/Definitions
- Sequence Options
- Fields to edit

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SEQUENCE DETAILS ARE SET INTO EACH APPLICATION

- After the Equipment Identifier is entered, sequences are preset in CHARacterization, Waveform, and IV Curve Applications.
- If only concerned about the IV test, use the defaults in the CHARacterization and Waveform screens and edit only the IV Curve Application.

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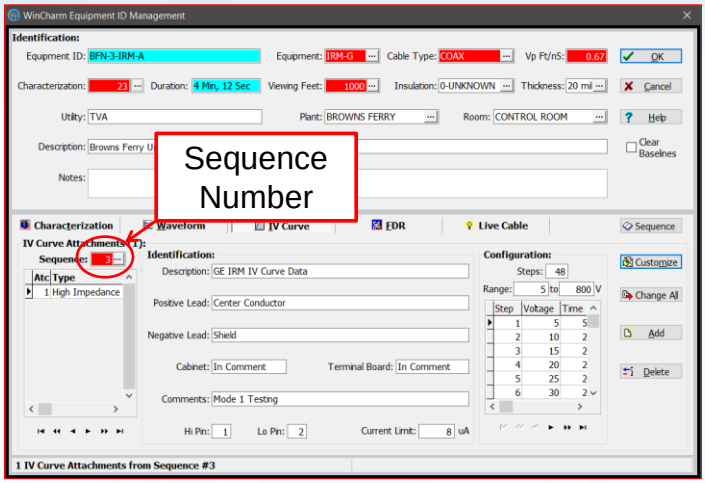
CHAR SEQUENCE IS PRESET BY CABLE TYPE



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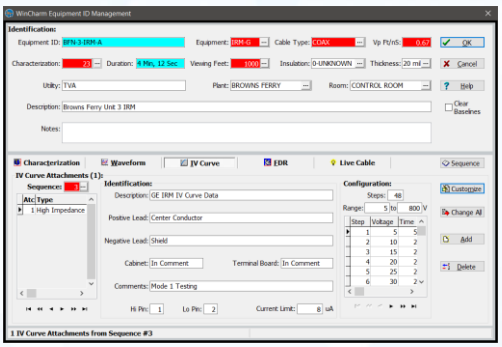
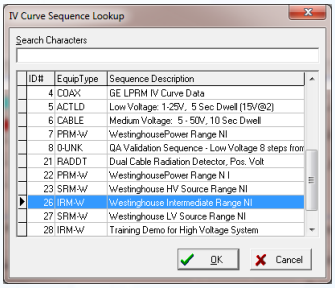
IV CURVE SEQUENCE AND OPTIONS





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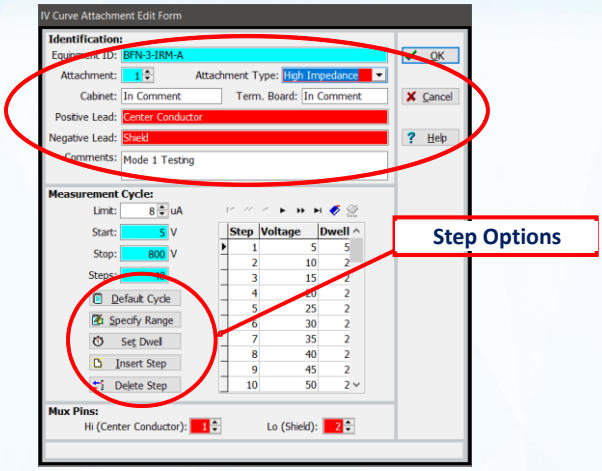
IV CURVE FIELDS TO EDIT



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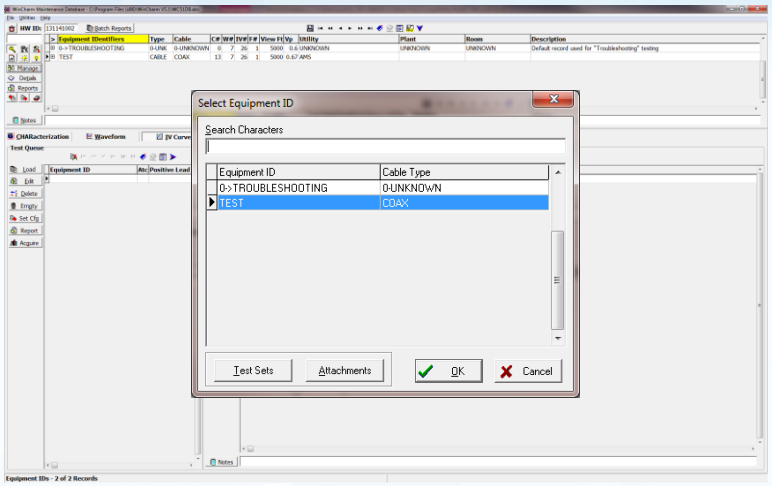
TO BEGIN THE IV TEST, LOAD THE EID INTO THE TEST QUEUE



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PROTECT TEST EQUIPMENT AND PLANT MEASUREMENT EQUIPMENT

- Observe High Voltage warning
- Bleed charge in cables before and after testing
- Use a bleed resistor of 100 kohm to 1 Mohm

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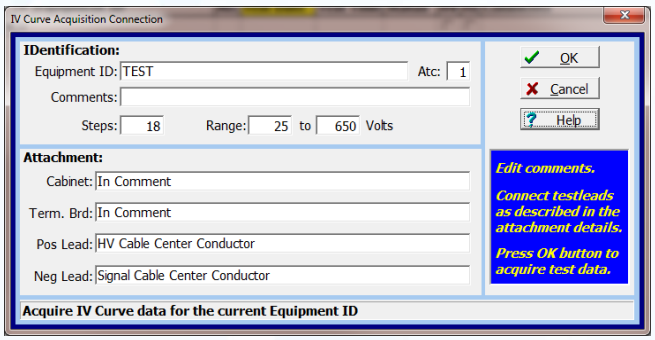
VERIFY THE TEST STEPS, VOLTAGE RANGE, DWELL TIME, AND COMMENTS



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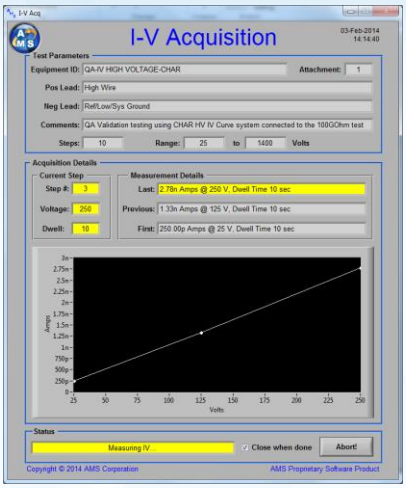
IV ACQUISITION SCREEN



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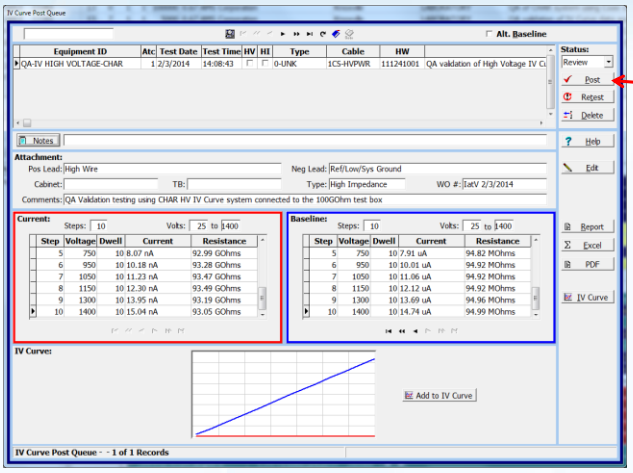
IV POST QUEUE SCREEN



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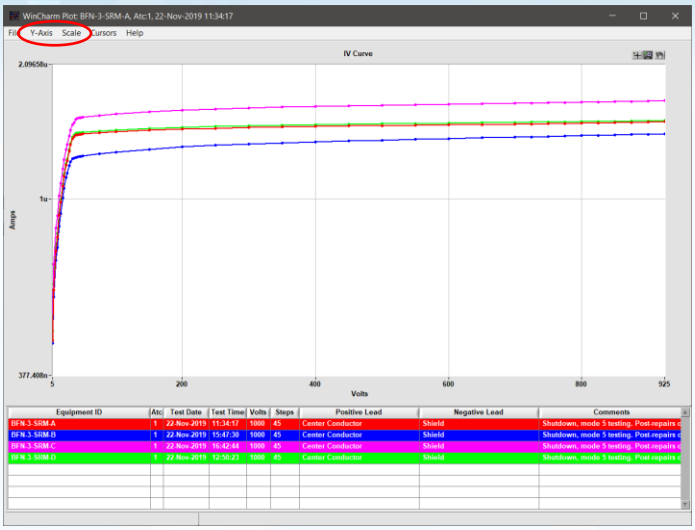
LOG (DEFAULT) OR LINEAR Y-AXIS DISPLAY CURRENT OR RESISTANCE



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Thank You!

Questions?