BE1-11f
Feeder Protection System

Washington State University
Hands-On Relay School

Basler Electric

www.basler.com
System Interface Software

- Flexible, comprehensive, intuitive, and user friendly
- Common to modern relays
- No cost
Programmable Logic

- Drag-and-drop interface with virtual switches, breaker control, timers, 7 available logic gates, and more.
- Available pre-programmed logic schemes for common applications.
System Summary

• Prevents errors
• Easy confirmation of relay setting
• Enabled and pickup set
• No pickup set
• Pickup set but mode disabled
• Disabled
BESTspace™  Templates

Communications Hardware

- Front-panel USB port—no more 9-pin cables and settings
- Rear-panel RS-485 port
- Rear-panel IRIG-B time port
- Optional Ethernet port
  - Copper
  - Optical fiber
Testing Aids

Relay helps you test!

- Targets
- Fault Summaries
- Fault Records
  - Analyze events
  - Use COMTRADE playback
- Relay self-test
- Status reporting
- Event reporting
Reporting Aids

- Fault summaries: 255
- Oscillographic event reports: 6–32
  - 1 or 2 reports per fault
  - 240 cycles, to 32 samples/cycle
  - COMTRADE
- 1028-event sequence-of-events recorder
- Non-volatile event memory for all
Familiarization Tests

- Power Up
- Communications
- BESTCOMSPlus style number
- IRIG time (if used)
- Contact sensing inputs
- Control outputs
- Current circuit
- Voltage circuits
- Power
- Aux V inputs
- Line/Bus Angle, Freq, Slip

Pages 305–310
Testing Procedure

- Reset targets
- Clear previous test logic (if needed)
- Make / modify logic and settings
  - “Save” to compile new logic
  - File > Save new settings
- “Upload settings and logic” to relay
- Perform test
- Enter results on provided report form (Page 14-82 and following)
Overcurrent 50-1

- Informative and straight-forward test
- Test 50-1 for pickup and timing, phase mode

Figure 14-19. BESTLogicPlus Settings (50, Phase Mode)


- Inverse-time overcurrent test
- Test 51-1 for pickup and timing, phase mode

*Figure 14-25. BESTLogicPlus Settings (51, Phase Mode)*
Voltage 27-1

- Phase undervoltage test
- Test 27-1 for pickup and timing, phase mode

Figure 14-3. BESTLogicPlus Settings (27P)
• Test 81-1 for over- and underfrequency testing
• Rate-of-change if time

Choose for each test
Questions?