



VR-3S FAQs

Can a DPU2000R or any other relay be utilized as control for the VR-3S?

The standard control for the VR-3S is the PCD relay. The PCD device provides all control functionality, in addition to providing a UPS for charging the battery. It also provides devices for monitoring and controlling the magnetic actuators in the VR-3S. The VR-3S can use other relays, but additional devices will be required to provide the same functionality at an additional cost.

In case of emergency, can the VR-3S recloser be tripped manually? without power?

Yes, a mechanical tripping operation can be performed. There is a yellow emergency mechanical trip arm located on the left side of the upper unit. The recloser can be closed or tripped via the one-step buttons on the PCD control's front panel. The user may also operate the recloser remotely when utilizing one of the communication links.

Does the magnetic actuator require a constant supply of energy?

No, the magnetic actuator is a bi-stable design, which means that the recloser's magnetic actuators do not require an electrical current to maintain them in either the open or the closed position. The magnetic actuators receive a momentary current pulse from the control to initiate an open or close operation.

Is a Remote Terminal Unit (RTU) required to communicate with the VR-3S?

No. Actually, the PCD has built-in communication ports, so in most cases you do not need an RTU to communicate with the recloser. The control's communications ports and available protocols allow for the installation of a radio or modem, providing an inexpensive link between existing SCADA systems and the recloser.

Do external CTs need to be installed in the VR-3S recloser?

No, the VR-3S includes three 600:1 encapsulated sensors (one in each pole assembly). These sensors are used for all current metering and protective functions and are sized not to saturate at the rated fault currents.

What happens if the auxiliary power to the PCD control has been lost?

If power to the recloser is lost and the battery pack is drained, the unit will not be able to trip or close, it will remain in its present state. The unit can always be tripped manually via the external mechanical trip lever. The PCD will initiate an alarm when the battery charge is low.

How do I tell if the batteries need to be replaced?

The PCD has a battery test function built into the unit. When Prog 1 button is pushed, a resistor is inserted in the battery circuit that measures the voltage drop during load. After the test it will display a value on screen. Any value lower than 4.8 volts is considered acceptable. A reading of 99.0 volts indicates that the batteries are dead.

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In a pole mounted unit, what happens if power to the recloser is lost? Can the unit be opened and closed?

Yes, the VR-3S pole mounted recloser comes standard with a battery pack capable of 48 hour carry over, which includes operation of the unit. The power drain to open or close the unit is very low since it only requires a pulse of 20 ms or 80 ms respectively to operate the unit. Also due to the magnetic actuator's bi-stable design, there is no energy required to hold the recloser in either state.

What if an actuator fails? Can single phasing be prevented?

The drastically reduced parts count and the elimination of a dedicated charging system makes the magnetic actuator a very reliable device. The PCD control has the ability to monitor each individual magnetic actuator for proper wiring and connections. If the control detects a failure it will initiate an alarm before the unit actually needs to operate.

How long will the VR-3S operate in the event of a loss of power?

Most utilities restore power in a short period of time, so this isn't a factor. However, the VR-3S recloser comes standard with a battery pack capable of 48 hour carry over which includes operation of the unit.

Can the PCD control be supplied with an internal radio?

The control cabinet has enough room to install a radio. There are several radios on the market that can be utilized in conjunction with the recloser by connecting through its communication ports and utilizing the available DNP3.0 or Modbus protocols. However, at this time, only TXD and RXD of the RS-232 standard are supported.

Can the bushing be provided in gray color?

For maximum ultraviolet protection, the bushings have been designed using a black polyurethane mixture.

I understand that the VR-3S is virtually maintenance free, but, in the event of a problem, what replacement parts need to be stocked?

The recloser upper unit only has one major replacement part, the pole assembly. It is designed for simple and quick replacement if needed. A recommended spare part inventory list is available.

What is the standard warranty length?

ABB warrants that the products manufactured will be of the kind and quality described in its specification and will be free of defects in workmanship and material for a period of three years from date of shipment.

With IPP's coming on line and having a reverse power flow situation, does the PCD detect and select alternate settings?

The PCD can detect reverse power flow situations and as a result, select alternate settings based upon programmed settings. In addition, the PCD can return to the original or primary setting based upon programmed settings. Thus the PCD can change from primary to alternate 1 or alternate 2 settings automatically, and then return to the primary setting automatically, without manual operation.

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Does ABB provide a retrofit cabinet, which can be operated by a Cooper Controller?

No, ABB does not provide a retrofit high voltage cabinet to operate with the Cooper Controller.

Does ABB provide a retrofit cabinet, which can operate a Cooper High Voltage cabinet?

ABB has a PCD retrofit that will operate most reclosers with electronic controls and can operate in a loop control configuration.

What type of connector is provided to connect the High Voltage Cabinet to Low Voltage Cabinet? Is the connector and cable of weather proof material?

The power cable connecting the low voltage cabinet to the high voltage cabinet consists of a 24-pin connector on each end. The connector is rectangular in shape, approximately 2 inches by 6 inches, provided with an outdoor type boot covering. The cable and connectors are outdoor type and waterproof.

How does the PCD Control battery test system work?

The battery test function applies a 1-ohm load to the battery for a short time (up to 100 milliseconds). The change in battery voltage during the test (no-load voltage minus loaded voltage) is reported as “Delta V.” If the battery test fails for any reason, “Delta V” is reported as 99 V. A valid battery test will return a “Delta V” less than 99 V. Since “Delta V” is proportional to the battery’s internal impedance, lower “Delta V” results are indicative of healthier batteries. As a battery ages, the internal impedance gradually increases. The allowable “Delta V” varies with PCD installation and application. However, it is suggested that the installation be inspected whenever “Delta V” exceeds 10% of the nominal battery voltage (4.8 V for a 48 V battery, 2.4 V for a 24 V battery).

Does ABB provide an adapter to test ABB reclosers with the Cooper MET tester?

Yes, the ABB’s MET-MATE Adapter can be used in conjunction with the Cooper MET Test Set. Please contract your marketing representative for additional information and pricing.

What type of battery system is provided with the VR-3S?

The battery system is 48 VDC, consisting of a quantity of four 12 VDC led acid batteries, 12 A hour.

Does ABB offer auxiliary contacts in the high voltage cabinet for input to other equipment?

No, ABB does not offer auxiliary contacts in the high voltage unit.

Can ABB provide vandal guards?

ABB offers a tamper resistant cable-locking sleeve. The cable-locking sleeve is fitted around the incoming cable to the low voltage cabinet. The sleeve is bolted from within the inside of the control cabinet, thus the sleeve cannot be removed from the outside, preventing an individual from removing the cable connector.

Can ABB provide a recloser and mounting frame completely assembled with six potential transformers installed?

Yes, ABB has done this for a number of clients for a nominal charge. Please consult your marketing representative.

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What is meant by a "non-isolated" RS-232 port?

The “non-isolated” RS-232 port means that it is hard wired to the controls and upon a power surge, or failure direct to the communications card, the PCD control may fail and the recloser will not operate. However, the ABB VR-3S Recloser has an “isolated” RS-232 and RS-485 port as standard, which means it is isolated with an optical coupler to the PCD. Power surge or failure direct to the communications card will not affect the PCD and the recloser will still operate. The failure is “isolated” to the communications cards and will not affect the CPU card. The VR-3S can be configured to exclude communications, in which case the ports would be “non-isolated.”

Can ABB provide the PCD Control with six PT inputs?

In order to have a configuration for six PTs, you must purchase the Com 5 card and the loop control module. This will supply three PTs, an additional three PTs will be supplied by the analog card, for a total of six PT inputs.

Does the battery back up the data records provided by the PCD Control?

The fault and operations records, along with the settings are preserved in non-volatile memory that is maintained by a 3 volt lithium battery (much like a computer). Therefore, once source power is eliminated and the 48-hour life of the batteries is used, the internal PCD control battery will maintain the data records, along with all PCD control settings, the correct time and date.

What is the measured time between pole operations for Three-pole trip?

ABB does not perform a direct test to measure time between pole operations. This is not an ANSI standard/requirement. However, we do test open and close times. From this test, we show that the trip times are consistently between 30 and 35 milliseconds. Therefore, we can conclude that the difference is less than five milliseconds. We can supply the production test reports with each recloser if requested.

Are the heaters in the VR-3S HV and LV Cabinets anti-condensation heaters? Are they required for performance, i.e. are they required in order to meet the operating range (-50°C to +70°C)?

The heaters are provided for condensation purposes and to maintain a temperature range inside the control cabinet of -40°C. The PCD has a temperature range of -40°C to +70°C.

Are arresters provided with the ABB mounting frame?

Arresters are not included with the mounting frame. The pole mount type frame includes mounting for three arresters and a mounting for a potential transformer. As an option, mounting provisions for three additional arrestors can be included. ABB recommends that arrestors be used to protect the recloser.

Does ABB supply a coated lead for connecting to the arresters?

ABB does not supply coated leads for connecting to the arresters.

What format are the data records provided in? i.e. Excel? Can they be exported?

The reports are downloaded from the WinPCD software in a .txt format, automatically saved in your computer's WinPCDT2 file folder. This format can then be opened in Excel. In order to open the .txt file in Excel, open Excel and select open all file types. Select the .txt file and the .txt import wizard will appear and format the file into an .xls format.

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FAQs

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Does ABB offer hot line tagging?

The new enhanced PCD faceplate offers the hot line tagging feature as standard, along with a temperature compensated display, counters button and separate close and open indicating lights, among many other features.

The VR-3S recloser is a first of its kind in the industry. It includes fast acting maintenance free magnetic actuation instead of a high maintenance mechanism, solid dielectric instead of oil or SF6 gas, and is substantially lighter weight than oil filled reclosers. It is available in 15, 27 and 38 kV ratings, 560 or 800 A continuous current. In response to what you have asked for, the VR-3S and its PCD control now have the capability to operate on individual phases!

Call 1-800-929-7947 +1-407-732-2000 for any other questions you may have.

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