



How to Set and Trip Single Phase From the HMI, WinPCD T2 and SCADA

Single Phase operation is highly recommended during commissioning of a PCD with the VR-3S. Single Phase operation can be performed via the HMI (front panel), WinPCD T2 or SCADA. In some cases, troubleshooting a PCD or VR-3S requires that each Phase/Pole can be verified in turn.

Note: In order for the PCD to be set to Single Phase, the option must be purchased with the PCD. The 12th digit of the catalog number indicates whether your PCD has the Single Phase option. If the digit is a “1” (8R37-1041-31-3101), then Single Phase operation can be performed. If it is a “0”, then Single Phase operation cannot be performed. However, the PCD CPU Type 2 Platform is upgradeable.

Call 1-800-929-7947 x 5 or +1-407-732-2000 x 2510 for this issue or any other questions.

Pre cautions

1. During commissioning make sure the VR-3S is bypassed.
2. Depress the Ground Block pushbutton (the associated LED is lit) till all three phases are closed in
3. Reset the PCD back to “Three Phase Tripping” in the Configuration Settings if required per your application

Instructions From the HMI/ Front Panel

1. Press ENTER
2. Scroll down to Settings
3. Press ENTER
4. Scroll down to Change Settings
5. Press ENTER
6. Scroll down to Configuration
7. Press ENTER
8. Press ENTER to enter Password
9. CHANGE CONF SETT
10. Press ENTER
11. Press RIGHT ARROW <1 Phase>
12. Press ENTER
13. Press CLEAR twice
14. Press RIGHT ARROW <YES>
15. Press ENTER
Note: With the Configuration Setting set to Single Phase, each phase can now be operated individually.
16. Press the Clear Key to return
17. Press ENTER
18. Scroll down to OPERATIONS
19. Press ENTER
20. Press ENTER to Trip Breaker
21. Press ENTER to enter Password
22. Press RIGHT ARROW twice for Phase A, three times for Phase B, and four times for Phase C
23. Press ENTER to trip the desired Pole
24. Press CLEAR to go back

Note: Perform the same procedure for CLOSE, which is the next choice under Trip Breaker

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Instructions From WinPCD T2

1. From the Enterprise Explorer Screen, select the desired Unit Database

Name	Catalog Number	Unit Addr	Baud	Comm Port	Firmware
06_339_R19_BFF20030127	8R171041313101	270	9600	COM1	2.52
363	8R391020413001	000	9600	COM1	2.6
ABB_Example	8R371041313001	001	9600	COM1	2.5
CP&L_REL2.1-560A	8R371041513101	000	9600	COM1	2.6
CP&L_REL2.1-560A-R1	8R371041513101	000	9600	COM2	2.6
HotLineTagCooperRetrofit	8R191020413001	001	9600	COM1	2.2
Import-PCD	8R371041313101	000	9600	COM2	2.6
Import-PCD HLT	8R191020413001	001	9600	COM1	2.2
LOOP	8R371041513111	001	9600	COM1	2.6
New Cooper Retrofit	8R391020413001	001	9600	COM1	2.6
New Greenbrier	8R171041313001	001	9600	COM1	2.3
Palmetto 2.40	8R191020413001	001	9600	COM1	2.4
SN.120031	8R371041313101	001	9600	COM2	2.6
SN.120032	8R371041313101	001	9600	COM2	2.6
SN.15896	8R181041313101	001	9600	COM2	2.3
SN.220549	8R371041313101	000	9600	COM2	2.6

2. Double Click and select On-Line (Database and Unit)

Manage Unit

Name/Model: CP&L_REL2.1-560A-R1

Catalog Number: 8R371041513101

Off-line (Database Only)

On-line (Database and Unit)

Fault/Operation Records Download

Back

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3. Press “Proceed”

Unit Information

Name:	SN.220549
Model:	PCD-2000-ANSI
Catalog Number:	8R371041313101
Serial Number:	220549
CPU Software Version Number:	2.6
DSP Software Version Number:	1.2
Front Panel Version Number:	2
Rear Comm Version Number:	0

4. From the Main Menu select “Settings”

Main Menu

Name/Model: SN.220549a Catalog Number: 8R371041313101

Selections

- Metering
- Settings**
- Records
- Operations
- Test
- Front Panel Status
- Waveform Capture
- Programmable Curves
- Trip/Close Commands
- Miscellaneous Commands
- Power Quality
- Quick Setup

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5. From the Settings Menu select “Configuration Settings”

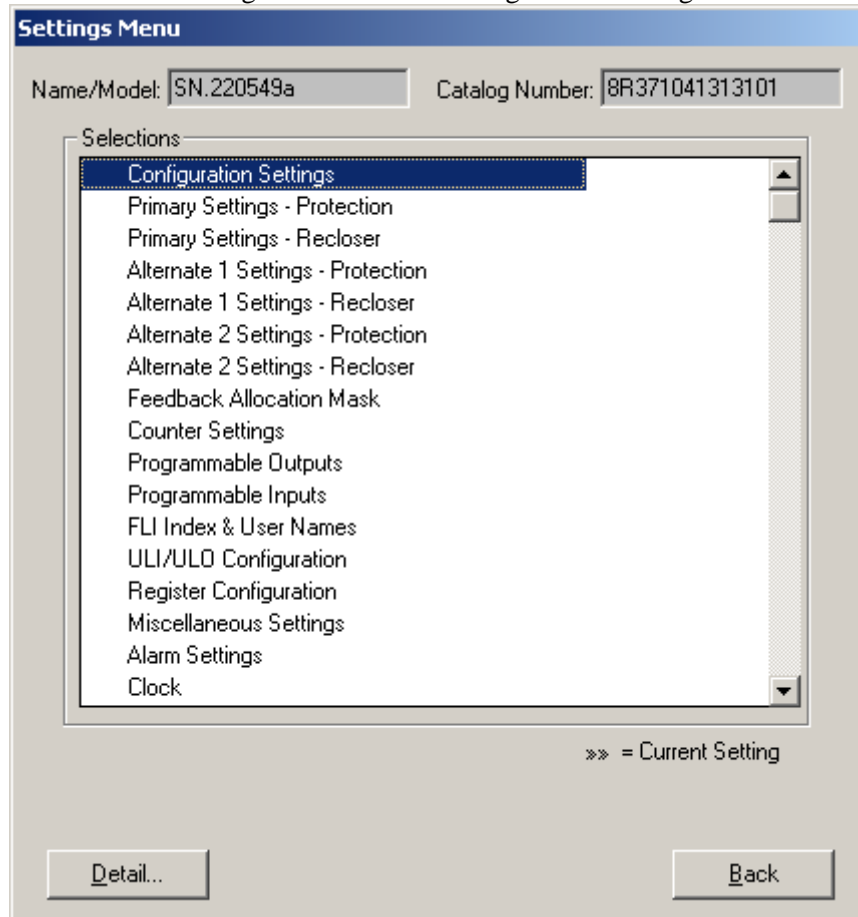


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6. From the Configuration Settings, select “Recloser Mode”

The screenshot shows the 'Configuration Settings' dialog box. At the top, there are two text boxes: 'Name/Model: SN.220549a' and 'Catalog Number: 8R371041313101'. Below these is a table with three columns: 'Setting', 'Database Value', and 'Actual Unit Value'. The 'Recloser Mode' row is highlighted in blue and shows 'Three Phase Tripping'. Other rows include 'Phase CT Ratio' (600), 'Neutral CT Ratio' (600), 'SE CT Ratio' (100), 'VT Ratio' (120), 'VT Connection' (120V Wye), 'Positive Sequence Reactance/Mile' (0.001), 'Positive Sequence Resistance/Mile' (0.001), 'Zero Sequence Reactance/Mile' (0.001), 'Zero Sequence Resistance/Mile' (0.001), 'Line Length(Miles)' (0.1), 'Trip Failure Time(Cycles)' (18), 'Close Failure Time(Cycles)' (18), 'Curve Set' (ANSI), and 'Phase Rotation' (ABC). At the bottom, there are several buttons: 'Database Value Detail...', 'Receive Data from Unit', 'Change Passwords...', 'Send Database Data to Unit -->', '<<-- Send Unit Data to Database', 'Print...', and 'Back'.

Setting	Database Value	Actual Unit Value
Phase CT Ratio	600	
Neutral CT Ratio	600	
SE CT Ratio	100	
Recloser Mode	Three Phase Tripping	
VT Ratio	120	
VT Connection	120V Wye	
Positive Sequence Reactance/Mile	0.001	
Positive Sequence Resistance/Mile	0.001	
Zero Sequence Reactance/Mile	0.001	
Zero Sequence Resistance/Mile	0.001	
Line Length(Miles)	0.1	
Trip Failure Time(Cycles)	18	
Close Failure Time(Cycles)	18	
Curve Set	ANSI	
Phase Rotation	ABC	

7. Change Recloser Mode to “Single Phase Tripping”

The screenshot shows the 'Setting Detail' dialog box. It has three text boxes: 'Name/Model: SN.220549a', 'Catalog Number: 8R371041313101', and 'Recloser Mode: Single Phase Tripping'. The 'Recloser Mode' is shown in a dropdown menu. At the bottom, there are two buttons: 'OK' and 'Cancel'.

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8. Send Database Data to Unit and then Press Receive Data from Unit

Configuration Settings

Name/Model: Catalog Number:

Setting	Database Value	Actual Unit Value
Phase CT Ratio	600	600
Neutral CT Ratio	600	600
SE CT Ratio	100	100
Recloser Mode	Single Phase Tripping	Single Phase Tripping
VT Ratio	120	120
VT Connection	120V Wye	120V Wye
Positive Sequence Reactance/Mile	0.001	0.001
Positive Sequence Resistance/Mile	0.001	0.001
Zero Sequence Reactance/Mile	0.001	0.001
Zero Sequence Resistance/Mile	0.001	0.001
Line Length(Miles)	0.1	0.1
Trip Failure Time(Cycles)	18	18
Close Failure Time(Cycles)	18	18
Curve Set	ANSI	ANSI
Phase Rotation	ABC	ABC

Database Value Detail... Receive Data from Unit Change Passwords...

Send Database Data to Unit -->> <<< Send Unit Data to Database Print... Back

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9. Press “Back” twice from the Main Menu, select “Operations”

The screenshot shows a software interface titled "Main Menu". At the top, there are two input fields: "Name/Model: SN.220549a" and "Catalog Number: 8R371041313101". Below these is a "Selections" list box containing the following items: Metering, Settings, Records, **Operations** (highlighted with a blue background), Test, Front Panel Status, Waveform Capture, Programmable Curves, Trip/Close Commands, Miscellaneous Commands, Power Quality, and Quick Setup. At the bottom of the interface, there are four buttons: "Transmit All Database Values to Unit", "Receive All Settings from Unit", "Detail...", and "Back".

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Instructions
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10. From the Operations Menu, Trip or Close the desired Breaker Phase

Operations Menu

Name/Model: Catalog Number:

Selections

- Trip Breaker (All Phases)
- Close Breaker (All Phases)
- Force Physical Input
- Force Physical Output
- Seal In/User Alarms
- Force Logical Input
- Tagging Function
- Activate Alternate Settings Group
- Block/Unblock Function
- Trip Phase A**
- Trip Phase B
- Trip Phase C
- Close Phase A
- Close Phase B
- Close Phase C

Reclose Blocked Disabled Remote Blocked Disabled

Trip Phase A

Trip Phase A command completed successfully.

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Instructions From SCADA (Reference DNP Protocol Guide)

1. With just the Configuration Setting “Recloser Mode” set to “Single Phase”, each Phase can be selected for Trip and Close.

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Binary Input Points
 Static (Steady-State) Object Number: 1
 Change Event Object Number: 2
 Request Function Codes supported: 1 (read)
 Static Variation reported when variation 0 requested: 1 (Binary Input without status)
 Change Event Variation reported when variation 0 requested: 2 (Binary Input Change with Time)

Point Index	Name/Description	Default Change Event Assigned Class (1, 2, 3 or none)	Static Data (Class 0) Scan Type Group
70	KSI – Logical Output – KSI Summation Alarm Energized	1	6
71	79CA – Logical Output – Recloser Counter Alarm 1 Energized	1	6
72	HPFA – Logical Output – High Power Factor Alarm Energized	1	6
73	LPPA – Logical Output – Low Power Factor Alarm Energized	1	6
74	OCTC – Logical Output – O/C Trip Counter Alarm Energized	1	6
75	32PA – Logical Output – 67P Pickup Alarm Energized	1	6
76	32NA – Logical Output – 67N Pickup Alarm Energized	1	6
77	VarDA – Logical Output – 3PHS Kvar Demand Alm Energized	1	6
78	79CA-2 – Logical Output – Recloser counter Alm 2 Energized	1	6
79	PVArA – Logical Output – Pos. 3PHS Kvar Alarm Energized	1	6
80	NVArA – Logical Output – Neg. 3PHS Kvar Alarm Energized	1	6
81	LOADA – Logical Output – Load Current Alarm Energized	1	6
82	CLTA – Logical Output – Cold Load Timer Alarm Energized	1	6
83	50-1D – Logical Output – 1 st Inst. O/C Dis. Alarm Energized	1	7
84	50-2D – Logical Output – 2 nd Inst O/C Dis. Alarm Energized	1	7
85	STC – Logical Output – Settings Table Chg Alarm Energized	1	7
86	ZSC – Logical Output – Zone Sequence Coord. Alarm Energized	1	7
87	PH3-D – Logical Output – PHS O/C Disabled Alarm Energized	1	7
88	GRD-D – Logical Output – GRD O/C Disabled Alarm Energized	1	7
89	TRIPA – Logical Output – Single Pole Trip (phase A)	1	1
90	TRIPB – Logical Output – Single Pole Trip (phase B)	1	1
91	TRIPC – Logical Output – Single Pole Trip (phase C)	1	1

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Binary Input Points
Static (Steady-State) Object Number: 1
Change Event Object Number: 2
Request Function Codes supported: 1 (read)
Static Variation reported when variation 0 requested: 1 (Binary Input without status)
Change Event Variation reported when variation 0 requested: 2 (Binary Input Change with Time)

Point Index	Name/Description	Default Change Event Assigned Class (1, 2, 3 or none)	Static Data (Class 0) Scan Type Group
152	Alternate Settings Group 1 Active	1	11
153	Alternate Settings Group 1 Pending	1	11
154	Alternate Settings Group 2 Active	1	11
155	Alternate Settings Group 2 Pending	1	11
156	59A - Phase A Overvoltage	1	5
157	59B - Phase B Overvoltage	1	5
158	59C - Phase C Overvoltage	1	5
159	59-3P - Three Phase Overvoltage	1	5
160	PUTA - Pickup Target, Phase A ¹	1	4
161	PUTB - Pickup Target, Phase B ¹	1	4
162	PUTC - Pickup Target, Phase C ¹	1	4
163	PUTN - Pickup Target, Neutral ¹	1	4
164	PTA - Phase Target Alarm	1	4
165	NTA - Phase Target Alarm	1	4
166	TAGOPN Status	1	11
167	TAGCLS Status	1	11
168	OPNBLK Status	1	11
169	CUSBLK Status	1	11
170	CUSBLK (Logical Output) Phase A Clear	1	11
171	CUSBLK (Logical Output) Phase B Clear	1	11

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Call 1-800-929-7947 x 5 or +1-407-732-2000 x 2510 for any other questions you may have.

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