

DRC-011 USER GUIDE





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INTRODUCTION

The DRC-011, is a smart controller for ENTEC Auto Recloser. Through the smart controller, operators can gain remote control & monitoring capabilities over medium voltage distribution grid operations (22kV & 35kV). Operators benefit from greater insights such as line fault activity, power information, power quality data and other vital information that help minimize outages, outage duration and increase power reliability.

Due to its effective operation, advanced capabilities & results, the DRC-011 maintains its popularity amongst some of the largest electric utility providers in the market. In addition to the benefits yielded from enhanced capabilities through the DRC-011 smart controller for ENTEC Auto Recloser, such as increased energy efficiency, reliability and minimization of power losses on the network, operators can also ensure higher levels of safety for their maintenance teams.

The DRC-011 uses GSM/GPRS network for communication, control and monitoring via smartphone application (Android) & RPM-Grid system (PC).





PRODUCT OVERVIEW

PRODUCT OVERVIEW



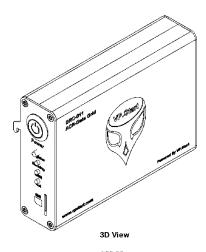
DRC-011 BOX PACKAGING

DRC-011 DEVICE



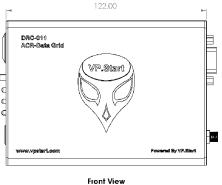


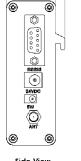
HARDWARE DIMENSIONS





HARDWARE DIMENSIONS





30.00

Side View

SPECIFICATIONS & FEATURES

Description

Specifications

Remote Control Unit

Country of Origin	Cambodia
Manufacturer's Name	VP.Start Technology
Manufacturer's Reference	DRC-011
Remote Controller (GSM/GPRS/Call Control) for ENTEC Auto Recloser 22/35kV	Yes
Remote Control Via Smartphone or PC for ENTEC Auto Recloser 22/35kV and can be Configured to RPM Grid System (Supporting System for a Smart Grid).	Yes
Voltage Supply Range	12-36 Vdc
Operating Frequency Band	GSM/GPRS: 900/1800 MHz
Ambient Temperature Range	0 to 65°C
Humidity	30% to 95%
Installation	
The Remote Control (DRC-011) is Connected Inside the Auto Recloser Cabinet (ENTEC).	Yes
Remote Control Functions & Features	
Control Functions:	
Control Switchgear (Open/Close)	Yes



Setting Functions:

Protection Setting (On/Off)	Yes	
Recloser Function (On/Off)	Yes	
Hotline Setting (On/Off)	Yes	
Sensitive Earth Fault Setting (On/Off)	Yes	
Ground Protection (On/Off)	Yes	
Alarm Settings: Source Alarm (On/Off), Switchgear Alarm (On/Off)	Yes	
Monitoring Features:		
Measurements: Current, Voltage, Real Power, Reactive Power, Apparent Power, Power Factor, Battery Voltage.	Yes	
Switchgear Position (Open/Close).	Yes	
System SELF CHECK	Yes	
Battery System Status (AC Supply, Charge, Discharge)	Yes	
Controller Location (on Google Map by Using the Tracking Abilities Function)	Yes	
Reporting & Event Logs:		
User Event Logs	Yes	
Alarm Notifications:		
Switchgear OFF Alarm	Yes	



SPECIFICATIONS & FEATURES

Source Supply OFF Alarm	Yes
Software Management:	
Add/Remove User	Yes
Add/Remove Controller (DRC-011)	Yes
View all Users	Yes
View all Controllers (DRC-011)	Yes
Controller ID Setting & Tracking Abilities	Yes
Map Views	Yes
Check/Top-up Balance	Yes
Smartphone App (Android)	Yes
Remote Control System Software:	
RPM-Grid Software (PC)	Yes
Call Control Features	
Key Tone Control Features:	
Read Measurement (Current, Voltage, Power)	Yes
Control Switchgear (Trip/Close)	Yes
Read Switchgear Start (Trip/Close)	Yes
Language & Voice Support:	
Language (Khmer)	Yes
Voice Instruction	Yes



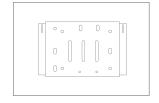
INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

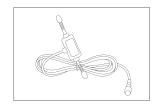
ACCESSORIES



DRC-011 Controller (1pc)



Controller Support (1pc)



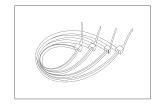
GSM Antenna (1pc)



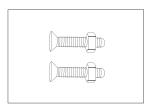
Serial Cable (Male to Female) (1pc)



DC Power Cable (1pc)



Cable Tie (6pcs)

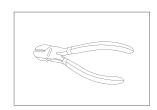


Screw + Nut (M4*15cm) (2pcs)

SUPPORTING TOOLS





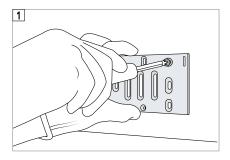


Multimeter

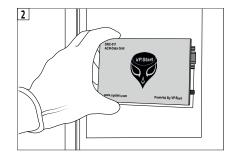
Screwdriver PH2

Diagonal Cutting Pliers

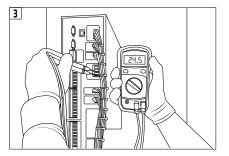
Controller Installation Process



Mount the controller support in the ENTEC cabinet.



Mount the DRC-011 controller on its support.

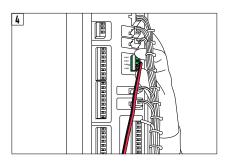


On ENTEC DC auxiliary power out terminal, check the voltage through pin 1 (VCC) and pin 2 (AGND).

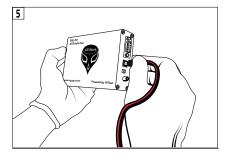
▲ NOTE

The voltage shall be around 24VDC.

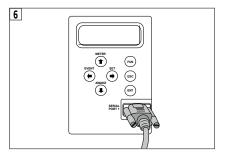
INSTALLATION INSTRUCTIONS



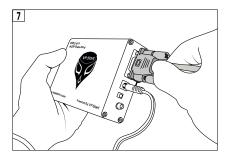
Connect DC Power Cable by the Red Cable to pin 1 VCC and Black Cable to pin 2 AGND.



Then connect to the DC 24V port on DRC-011 Controller.



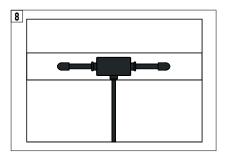
Connect Serial Cable (Female) to SERIAL PORT 1 on ENTEC Controller.



Connect Serial Cable (Male) to RS232 port on DRC-011 Controller.

INSTALLATION INSTRUCTIONS

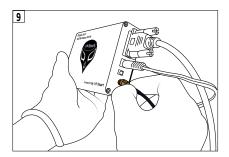
INSTALLATION INSTRUCTIONS



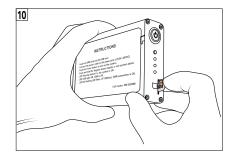
Install GSM Antenna to the appropriate area at site.

A NOTE

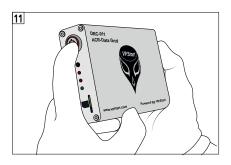
The area that allows the antenna get better signal strength.



Then connect to the ANT port on the DRC-011 controller.



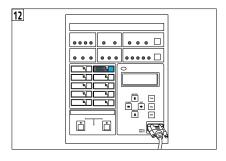
Insert micro SIM into SIM Slot on DRC-011.



To start up the DRC-011, by pushing the Power button.

A NOTE

- The DRC-011 is running normally if the running LED is blinking every 1s.
- The GSM connection is Good if Net LED flashing every 3s.
- The GSM Module is Okay if GSM LED is ON.



Turn on REMOTE ENABLED.

APP USER GUIDE

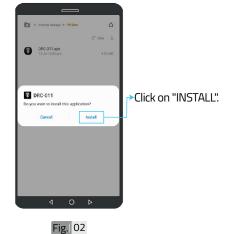
Mobile Phone Interface Usage



How to Install DRC-011 App on Smartphone



Click on "DRC-011 .apk" to install.







DRC-011 App installed.







Create User Account



Click on "DRC-011 App" to open App.



If the system pop up allow DRC-011 to access.

Then click on "Continue".







Create User Account login interface.



Create: Username and Password.

Then click on "LOGIN".







EVRC2A DRC-011 Fig. 09

A NOTE ♥ When installing the DRC-011 smartphone application for the first time, users will have to register the first DRC-011 controller before they can access other functions.



▲ NOTE After the first controller is registered, users can access other functionalities as shown.

Fig. 10

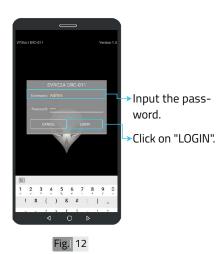
Login to App



Click on "DRC-011 App" to open App.



Fig. 11



VP-DOC-UG-D011-V1.0 www.vpstart.com



Service



DRC-011 App functions.



→Click here to view "Help, Service and Exit".

Fig. 14



After the device(s) has been registered. Alarm service is enabled by default.

To stop it, click on Stop service to stop receiving automated alarms from the controller through the smartphone app.



Alarm service is not running when your smartphone has not enabled DRC-011 alarm service as shown in Fig. 16.





VP-DOC-UG-D011-V1.0 www.vpstart.com

Fig. 15

Start service

To start the alarm service.

Click on "Start service" to start receiving automated alarms from the controller through the smartphone app.



Alarm service is running when your smartphone has enabled DRC-011 alarm service as shown in Fig.18.

Fig. 18





Adding Users



Click to open "Add User".



Click here to view all VP.Start ID (Phone Number).

Fig. 20

Fig. 19









Confirm "OK" button.



The application will display "Done" as a pop up notification to confirm the registration of the new user into the system for a specific controller.

A NOTE

Fig. 23





All Users



Click to open "All Users".



Click here to view all VP.Start ID (Phone Number).







Choose a VP.Start ID.





Confirm "OK" button.

Fig. 28









All Users view.



Delete User

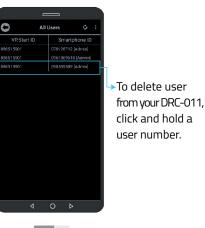




Fig. 32

Click on Delete "Users phone number".

APP USER GUIDE



Confirm "OK" button.

Fig. 33



User deleted.

Fig. 34



Add VP.Start ID



Click to open "Add VP.Start ID".



Click to write location name (DRC-011 name).

Click to write VP.Start ID (DRC-011 phone number).

Fig. 36

Fig. 35



Click on "ADD" button.





Confirm by "OK" button.





Map Views



The application will display "Success" as a pop up notification to confirm the registration of the DRC-011 controller into the system.





notification bar.

Scroll down





♥ DRC-011 1035 and Fig. 41

Turn on location.



Turn on Internet.





Click to open "Map Views".



Select a VP.Start ID.





→Click here to chose map views. ►View Normal map. View Hybrid map. ►View Satellite map. >View Terrain map. Fig. 45



Normal view



Hybrid view



Satellite view









Terrain view



Hold on VP.Start icon to show Drive Mode to VP.Start controller on Google Мар





Map Views (Change Map Coordinates)



To change map coordinates, click and hold VP.Start ID in "Map Views".



Click on "Change map coordinates".











DRC-011 location changed.



(11) Map Views (Change Map Picture)



To change map picture, click and hold VP.Start ID in "Map Views" as Fig. 55. And click on "Change map picture".



Fig. 56

Take photo from "Camera" or choose photo from "File" and select photo. And confirm by "OK" button.







Map Views (Delete Map Picture)



DRC-011 map picture changed.





To delete map picture, click and hold on map picture.





Click on "Delete map picture" and confirm by "OK" button.



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DRC-011 map picture deleted.









Click on "All ID".



All VP.Start ID view.







Control Interface



Select a VP.Start ID.



Click on "CONTROLS"









APP USER GUIDE



Click on "OK" button.





▲ NOTE The "Signal Strength" will pop up as a notification message below indicating signal strength between 1 - 31 at the controller's site location. Signal strength of 15 and above is recommended.





To control "Open Switchgear", click on "Open" button.



Click on "YES" button to Open Switchgear.







Control "Open Switchgear" success.



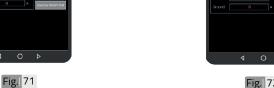
To control "Close Switchgear", click on "Close" button.



Control



Click on "Yes" button to close switchgear.





Control "Close Switchgear" success.







Fig. 73

To turn switch alarm on, click on "Switch Alarm OFF" button. And confirm by "OK" button.



Fig. 74

A NOTE

Tuccess" will pop up as a notification message below indicating that you have turned on the automated "Switch Alarm" notifications successfully.



To turn source alarm on, click on "Source Alarm OFF" button. And confirm by "OK" button.





Fig. 76

▲ NOTE

TSuccess" will pop up as a notification message below indicating that you have turned on the automated "Source Alarm" on notifications successfully.

15)

Measurements Interface





Click on "OK" button.





Fault Flags Interface



Measurement Interface.





Fig. 80



APP USER GUIDE



Click on "OK" button.



Fig. 82

Fault Flags Interface.





User Event Logs Interface











User Event Logs showed.

Click on "Refresh" button and click on "OK" button to get more Cooper Event Logs.





To delete User Event Logs, click and hold User Event Logs.





Click on "Delete All User Event Logs" and click on "OK" button to confirm.





Tracking Abilities Interface



User Event Logs deleted from app interface.



Fig. 90

Fig. 89



Click on "OK" button to read DRC-011 controller Tracking Abilities.



- Click to read data on phone.
- Click to update data from phone to system.
- Click to update date to phone.

Fig. 92

Fig. 91 VP-DOC-UG-D011-V1.0

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(20)

Remote "Call Control"



Click on "Call" button to make call control.

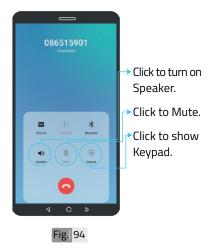
Fig. 93



Remote call control interface.







CALL CONTROL

Click **1** for Khmer.

Click 2 for English.

Click **3** for an introduction to its features and an explanation of how to use the DRC-011.

Click 6 for "Current".

Click for "Voltage".

Click to know about the "Switching Position" function.

Click (3) for "Re-start Controller".

Click for "Power Consumption".

Click of for Opening "Control Mode".

Click **1** for "Open".

Click for "Close".



Renaming VP.Start IDs (DRC-011 Controllers)



To rename VP.Strat ID, click and hold on VP.Start ID icon.





Click on "Rename".

Fig. 97

APP USER GUIDE



Rename existing name. And click on "OK" button.



Controller's name changed.

Fig. 99



Delete VP.Start ID



To delete VP.Start ID, click and hold on VP.Start ID icon.

Fig. 100



Click on "Delete". Then click on "OK" button.

Fig. 101



Clear Alarm



◆ "Success" will pop up as a notification message below indicating that the controller has been successfully deleted from the system.

Fig. 102





To Clear Alarm, click and hold on alarmed VP.Start ID.

Fig. 103





Click on "Clear Alarm". Click on "Back" sign.



Alarm VP.Start ID cleared.





Change Profile Picture



To change profile picture, click and hold on VP.Start ID icon.



→Click on "Change profile picture".

Fig. 106

Fig. 107





Take photo from "Camera" or choose photo from "File". And confirm by "OK" button.





Profile picture changed.





Delete Profile Picture



To Delete profile picture, click and hold on VP.Start ID icon.





Click on "Delete profile picture". And confirm by "OK" button.

Fig. 111



N F01 AJG (CMM FC)
7945 9961146127



Top Up / Check Balance



Controller profile picture deleted.

▲ NOTE Tuccess" will pop up as a notification message below indicating that the controller has been successfully deleted from the system.



To top up or check balance, click and hold on VP.Start ID icon and click on "Balance".

Fig. 113

Fig. 112



- Input the check or top up balance command.
- Click on "SUBMIT" to send the "Check or top up balance" command to the controller.

Fig. 114



Confirm by "OK" button.

Fig. 115



Google Map



Balance interface showed.





To view Google Map with Drive Mode to VP.Start controller, click on "Google Map".

Fig. 117



Google Map Drive Mode showed. Click on "X" sign to view in Google Map view.



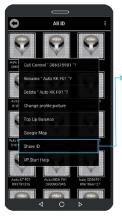


Google Map viewed.





Share ID



To share VP.Start ID to other phone number, click and hold on VP.Start ID icon and click on "Share ID".

Fig. 120



Click to write phone number to share.

Click on "SEND" button.

Fig. 121

A NOTE Tuccess" will pop up as a notification message below indicating that you have successfully shared the DRC-011 controller's ID and controller information to another phone number as a SMS as shown in Fig. 122.



▲ NOTE Controller ID and information displayed as an SMS with a shared number.

Fig. 123

Fig. 122



VP.Start Help



To alert to call center immediately for help, click and hold on VP.Start ID icon and click on "VP.Start Help".

Fig. 124



Click on "Ok" button. The app will command the DRC-011 controller to automatically share its ID information and call directly to VP.Start's call center to alert our support team immediately.

Fig. 125



A NOTE As shown in Fig. 126, the DRC-011 controller will share its ID to VP.Start's call center.

Fig. 126



the support team.

A NOTE

As shown in Fig. 127,

controller is calling

VP.Start's call center to immediately alert

the DRC-011

Fig. 127





All ID

If the controller is inaccessible for any reason, the app can be used to manually send the controller ID to the VP.Start call center. Click on "SEND CONTROLLER ID: 098555589" to execute the commend. And confirm by "OK" button.

Fig. 128



Fig. 129

▲ NOTE

The user has shared the controller's ID manually with VP. Start's call center as shown in Fig. 129.

Or Click on "CALL CENTER: 098 555 589" to call to VP. Start's call center.

Fig. 130



Fig. 131

A NOTE

User has manually executed the command to call VP. Start's call center.



Alarm System



Switchgear off Alarm.





22kV Supply off Alarm.

Fig. 133



◆ Analarmnotification message will appear whenever the system develops a problem such as Switchgear OFF or 22kV Source OFF.



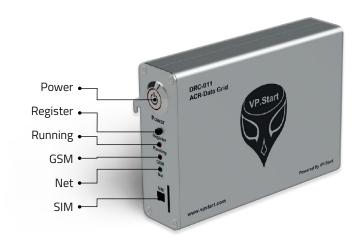


Fig. 135

Click on "LOGIN" to login controls interface panel. Click on "EXIT" to exit an alarm notification message.



TROUBLESHOOTING



LED Light Status Explanation

LED Light	LED Status	System Working Status
Power	Off	The Power button is not turned On. No power input.
	Red	Power On
Running	Red (blinking every 1s)	Running normally
GSM	Red On	GSM On
	Off	GSM Off
Net	64ms On/800ms Off	GSM has not registered to a network
	64ms On/3000ms Off	GSM has registered to a network
	64ms On/300ms Off	GPRS communication
	Off	GSM is not running

Test Serial DRC-011 Controller



To Test Serial DRC-011 Controller, click on "Menu Option" sign.







Connect pin 2 to pin 3 on DRC-011 controller.







Serial Error.





Serial OK.



06

TROUBLESHOOTING

CONTACT US



VP.Start







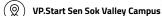








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