SMART GRID
SOLUTIONS

SIMA Grid, SIMA City, SIMA Home, SIMA Universe, SIMA Big Data

DRCs ...

DRC-001

DRC-001
ACR-Data Grid

VP.Start

Power
Register
Running
GSM
Net
SIM

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Powered By VP.Start

Welcome to SIMA Annex!

Sen Sok Valley Campus
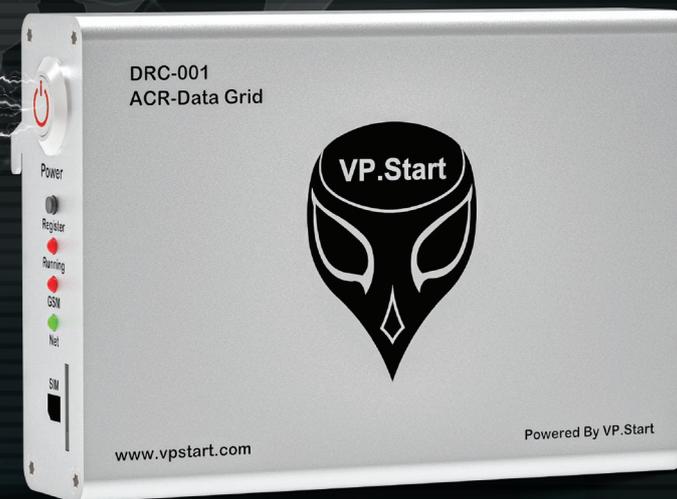
Creating a one-stop eco-sustainability system to transform the entire conventional grids into digital smart grid systems that streamline electrical grid management, optimize efficiency, reduce operational costs, and increase cost efficiency, making the grid more reliable and sustainable.
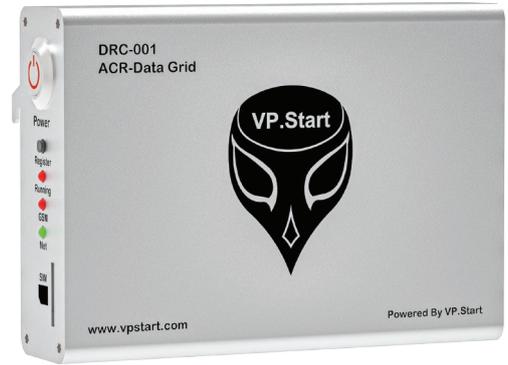
DRC-001

Smart Grid IoT Controller for Auto Recloser

The DRC-001 is a flagship solution developed since 2014 to modernize Auto Circuit Recloser (ACR) on medium voltage distribution lines.

This innovative device has the ability to transform the aging Auto Circuit Recloser into a digitally operated system with a short period of time.

The DRC-001 is recognized as a Smart Grid IoT Controller that is unique because of its strong capability to make the grid more resilient while delivering great return on investment for utilities.

What makes the DRC-001 standout and impact the distribution grid network?
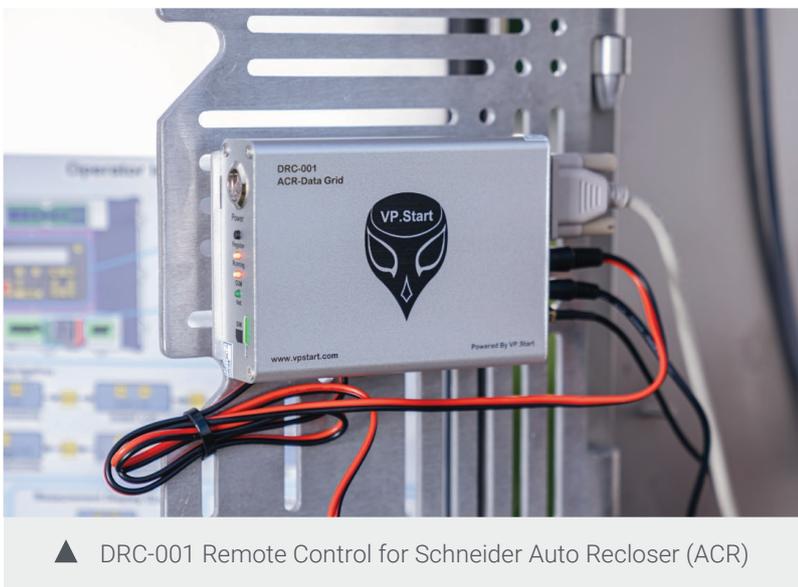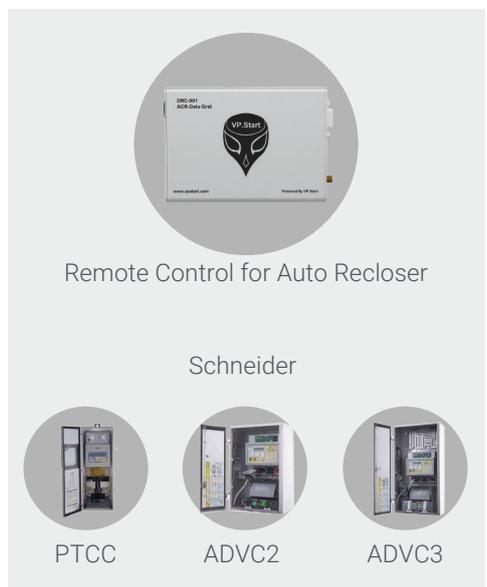

▲ DRC-001 Installation
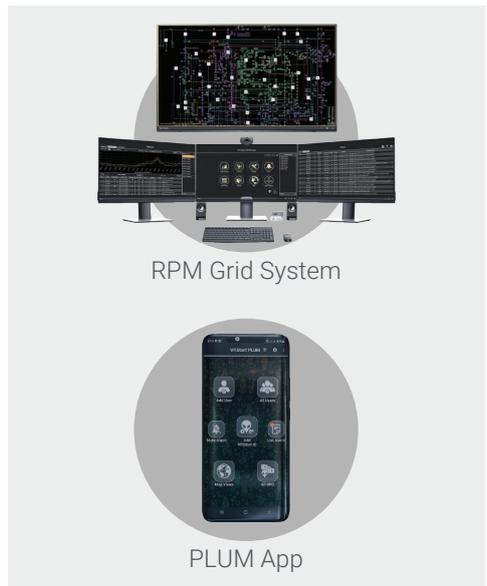
RPM Grid System

PLUM App

▲ DRC-001 Remote Control for Schneider Auto Recloser (ACR)

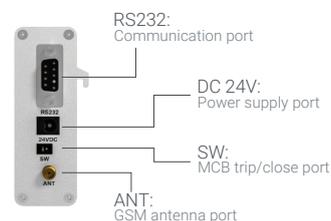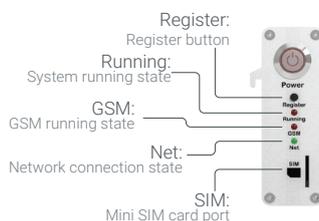
Remote Control for Auto Recloser

Schneider

PTCC

ADVC2

ADVC3

Key Features

Real-time Data Grid Monitoring:	The DRC-001 is capable of collecting a wide range of real-time data from the ACR, enabling utility operators to oversee the whole status of the powerlines. This approach is crucial for analyzing critical parameters to reduce energy losses, detect unbalancing phases and voltage drops, and generate a report for improved decision-making, leading to enhanced grid management more efficiently and sustainably.
Faults Detection:	The DRC-001 instantly detects faults on the powerline in real time. This critical feature enables faster issue resolution, significantly reducing outage duration.
Abnormal Detection:	VP.Start developed an advanced abnormal detection feature into the DRC-001 to identify failures in the Recloser controller that is the critical concern for utilities. This feature instantly triggers alarm notifications upon detecting any abnormalities in the ADVC controller, enabling utilities to respond quickly and efficiently to potential issues.
Remote Control Capability:	The DRC-001 also provides a seamless remote control to trip/close the switchgear of ACR instantly – merely using a smartphone or the RPM Grid System. This innovative feature reduces operational costs and boosts operator's safety.
Measurements:	The Measurements function serves as a pivotal tool essential for actively monitoring and assessing the dynamic status of the electrical distribution network. It empowers operators with real-time insights into critical parameters including current, voltage, active power, reactive power, apparent power, power factor, and frequency.
Settings:	The Settings function enables the operator to modify the parameters of electrical equipment, such as Hosting, Trip Lockout, and so on. Operators no longer need to manually adjust the settings of the Auto Recloser ADVC on-site any more.
Single Diagram:	Single Diagram function enables operators to display all the electrical equipment in schematic diagram form. This function assists operators in easily identifying the fault section.
Google Map View:	Map view function allows the operator to pinpoint the actual location of DRC-001 in Google Map. They can especially identify the impacted area easily when any interruption happens.

Product Look and Dimension

Register:
Register button

Running:
System running state

GSM:
GSM running state

Net:
Network connection state

SIM:
Mini SIM card port

RS232:
Communication port

DC 24V:
Power supply port

SW:
MCB trip/close port

ANT:
GSM antenna port

DRC-001 Alarms Notification

Switchgear Off	MV Absence	Communication Maintenance	Door Open Alarm	Battery Low	MCB Switch off

Product Specification

Remote Control Unit

Voltage Supply Range	• 12-36 Vdc
Operating Frequency Bandwidth	• GSM/GPRS: 900/1800 MHz
Ambient Temperature Range	• 0 to 65°C
Humidity	• 30% to 95%

Installation

The Remote Control (DRC-001) is Connected Inside the Auto Recloser ADVC Cabinet (Schneider).	• Yes

Remote Control Functions

Control Switchgear (Trip/Close)	• Yes

Setting Functions:

Phase Trip Current Fault	• Yes
Ground Trip Current Fault	• Yes
Time Recloser	• Yes
Trip Lockout	• Yes
Protection Setting: Auto-Reclose (On/Off), Ground Protection (On/Off), SEF (On/Off), SEF Alarm (On/Off), Hotline (On/Off), Dead (On/Off)	• Yes
Power Flow Direction Setting: Source I Load X, Source X Load I	• 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, Frequency, Battery Voltage.	• Yes
Switchgear Position (Trip/Close)	• Yes
System Frequencies: 50 (Hz)/60 (Hz)	• Yes
Trip Flags: Over Current, Earth Fault, SEF, NPS, Frequency Fault, Loss of Phase, External Fault	• Yes
Switchgear Operation Counter	• Yes
Fault Type Detection	• Yes
Protection Status: (On/Off)	• Yes
System Contorl Mode: Local Mode/ Remote Mode	• Yes
Controller Location on Google Map by using the Tracking Abilities Function.	• Yes

Reporting & Event Logs:

Power Report: Daily, Weekly & Monthly	• Yes
ADVC Event Logs	• Yes
User Event Logs	• Yes

Alarm Notifications:

Switchgear OFF Alarm	• Yes
Source Supply OFF Alarm	• Yes
CB 220V Switch OFF Alarm	• Yes

Remote Control System Software:

Smart Phone App (Android)	• Yes
RPM Grid Software (PC)	• Yes

Call Control Features

Key Tone Control Features:

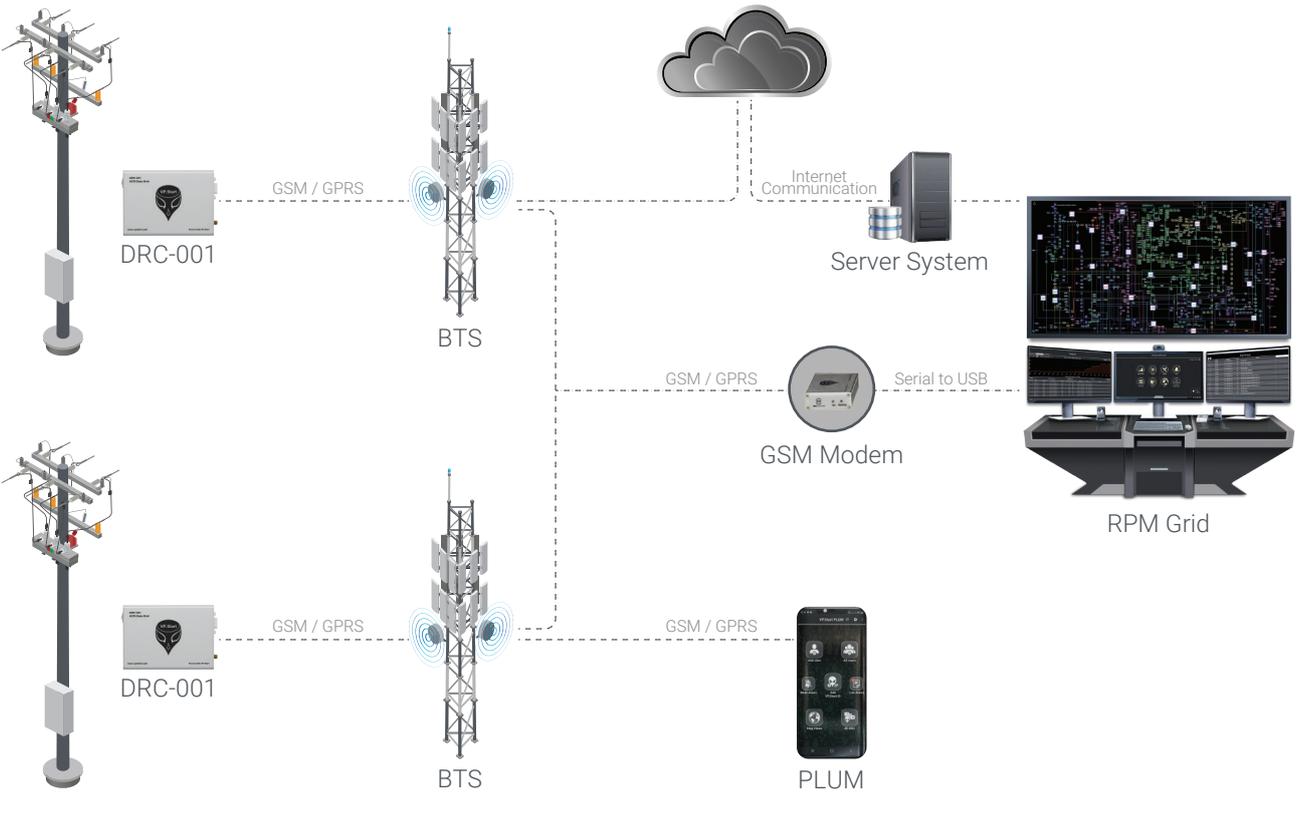|	
Read Measurements Report [Current, Voltage, Power]	• Yes
Control Switchgear (Trip/Close)	• Yes
Read Switchgear Position (Trip/Close)	• Yes

Language & Voice Support:

Language (Khmer)	• Yes
Voice Instruction	• Yes

System Architecture

DRC-001   GSM / GPRS   BTS

Internet Communication   Server System

GSM / GPRS   GSM Modem   Serial to USB   RPM Grid

DRC-001   GSM / GPRS   BTS   GSM / GPRS   PLUM

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