VELVET

Version 11.0

Installation and User Manual

May 2015

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Intended Target Audience

This Installation Guide was created and designed as a resource for administrators and systems integration technicians for the configuration and deployment of the PURPLE ARROW VELVET Automation Controller from PURPLE ARROW. The document provides detailed configuration best practices instruction materials for the controller and associated software. While this guide may reference user interactions and functions of the Velvet Smart-Client it is not intended to be a user manual. User Help is part of the application.

Table of Contents

Features

1. Home/Office Wi-Fi Integration – Can be integrated with existing Wi-Fi network at your home or office.
2. Light/Fan Control – Virtually any electrical device can be switched ON/OFF.
3. Dimmer Control – Linear dimming control for fans and incandescent lamps.
4. Video Door Bell – Door IP camera can be integrated to view the visitor upon push of the door bell.
5. Door Latch Control – Electric door locks can be operated.
6. Curtain Control – Motorised curtains can be controlled.
7. Wireless appliance control – Infra red based wireless electronic/electrical appliances/equipments can be integrated.
8. Wireless Dimmer Module – Remotely located dimmable devices can be controlled using wireless dimmer.
9. Wireless Switch Module – Remotely located electrical devices can be turned ON/OFF using wireless switch module.
10. Wireless Switch Heavy Load Module - Remotely located heavy load electrical devices such as geyser, AC, etc. can be turned ON/OFF using wireless switch module.
11. Customizable Scenes – Scenes can be configured for easy one touch calling of a series of events.
12. Scene Scheduling – Scenes can be scheduled for unattended run at a scheduled time.
13. Web TV – Integrated UI for internet TV.
14. Web Radio – Integrated UI for internet radio.
15. Room Creation – Rooms can be created and named to resemble your own home setup.
16. Sensor integration.

Specification

1. Controller

Connectivity	
WiFi	2.4 GHz IEEE 802.11 b/g/n
IR	1 IR Blaster, 1 IR Sensor
Interfacing	Over Wi-Fi
Devices	
Relay	8
IR	16
Input	
230V AC Activated	2
Power	
Input	230VAC, 0.5A, 50Hz
Load	
Relay Contact	N/O - Max. 10A, 250VAC, N/C - Max. 10A, 250VAC
Mounting	
Wall Mount	Yes
Dimensions (H×W×D)	7.5 cm × 30.0 cm × 36.5 cm
Gross Weight	5.2 kg
Accessories	
IR Blaster	1 (Range – upto 25 feet)
IR Sensor	1

2. Software

OS	Android 3.1 or higher
Scenes	User Configurable, Unlimited number of scenes
Navigation	Modular

What's inside the Box

1. Velvet Automation Controller
2. Wi-Fi Antenna (Optional)
3. IR Blaster
4. IR Reader
5. Wireless Switch (Optional)
6. Wireless Dimmer (Optional)
7. Wireless Switch Heavy Load (Optional)
8. IR-IR Module (Optional)

A Typical Setup Scenario

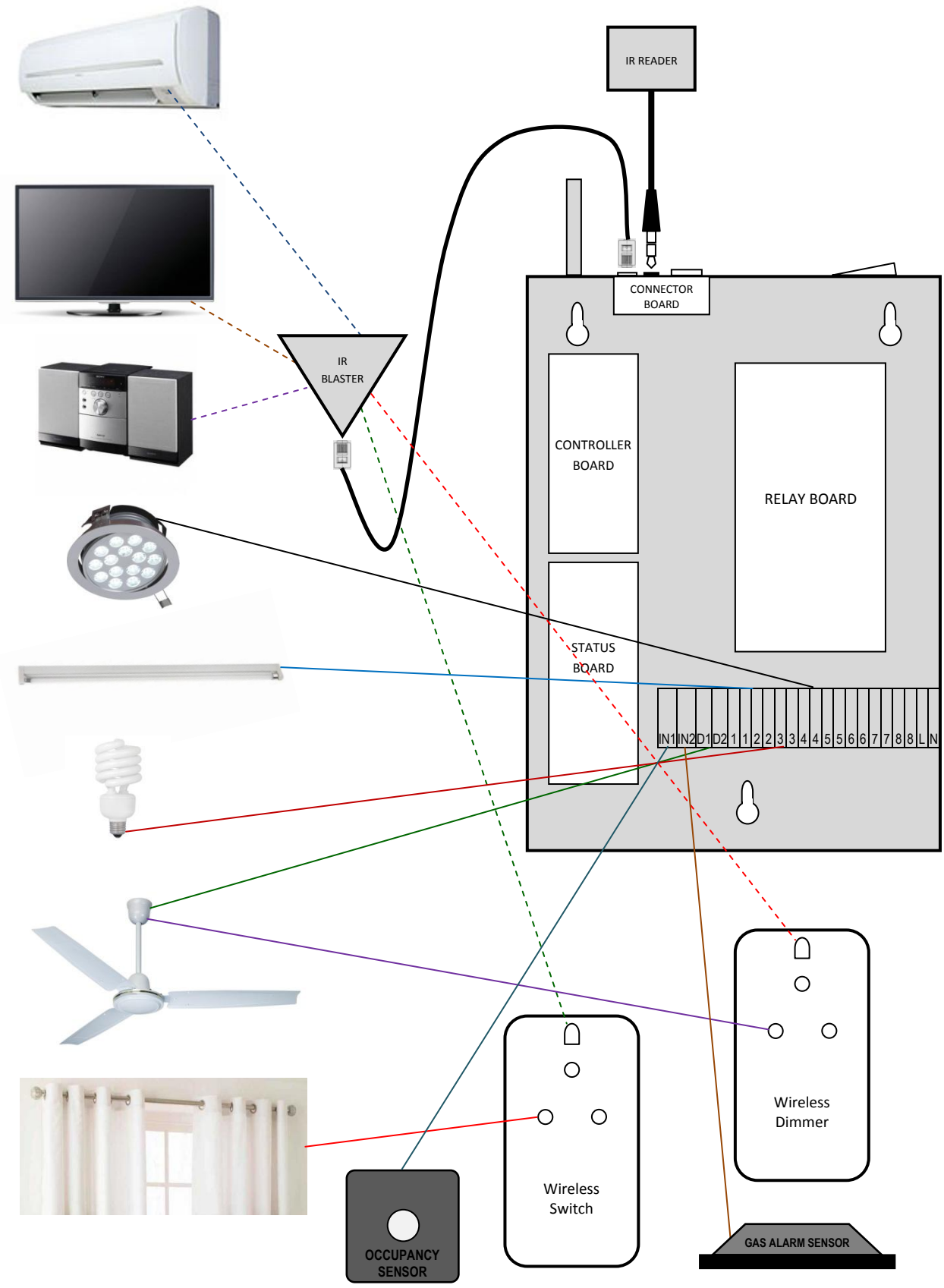


Fig. 1

Hardware

The Controller

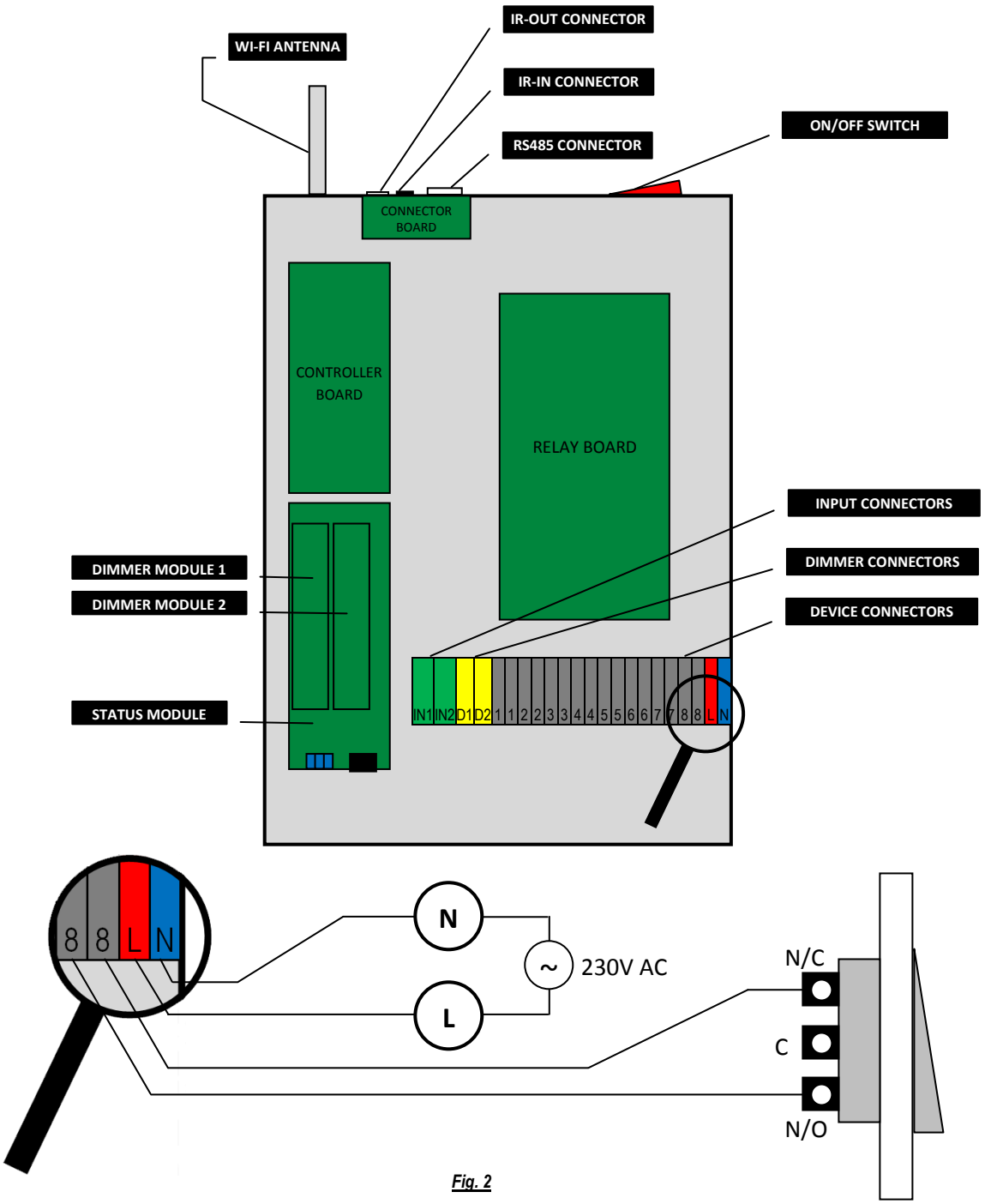


Fig. 2

Connect the N and L connector terminals to the Neutral and Live connections respectively of MAINS 230VAC to power up the controller.

The polarity of Mains connections should be carefully checked and connected exactly as instructed. Reverse polarity may cause a short circuit in the Mains power line.

1. Velvet Automation Controller Installation

Mount the controller near the main switch board of the room with the help of supplied screws.

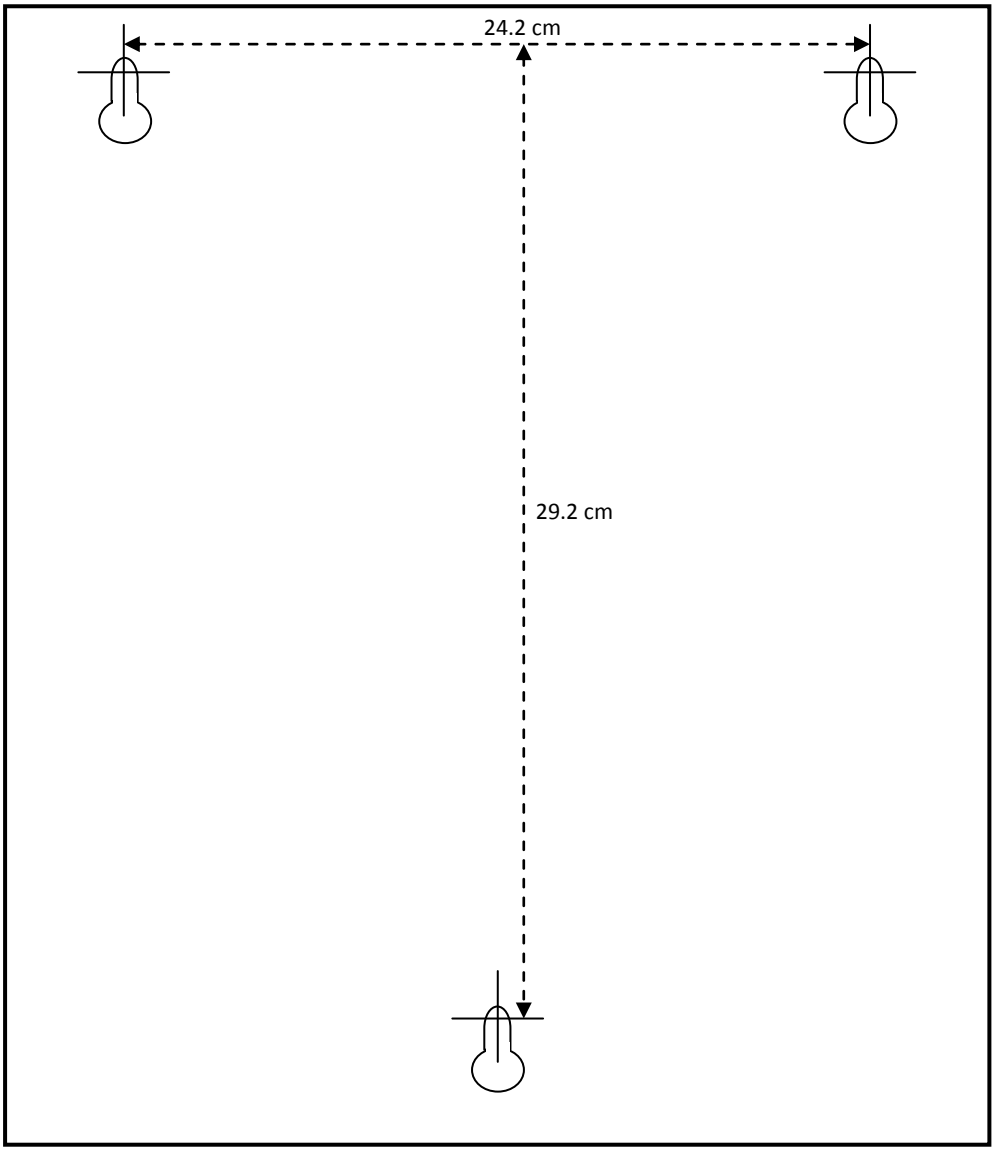


Fig. 3 (Screw Hole Dimensions)

2. Status Module Connection

The Status module is an integral part of this system which helps us get present state of devices on the Android GUI. To be able to achieve a consistent operation of two-way switches, the connection needs to be done in exactly the same manner as described.

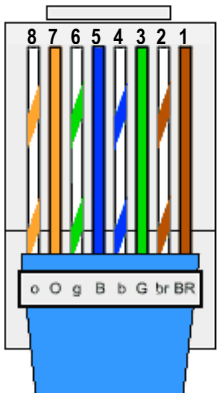


Fig. 4

The Status module has an RJ45 socket on-board which is used to connect the CAT-6 cable with the switches on the switch board. The RJ45 plug needs to be crimped to the CAT-6 cable on site using the standard straight through network wire connection protocol T-568B as shown in ***Fig. 4***.

The numbers on the pin positions relate to the channel number on the Velvet controller.

Now, at the switch board end, use the following table to connect the respective wire to the 'C' terminal of the respective switch. This C terminal of each switch will be connecting the device wire plus one wire from the Status module.

CAT-6 Cable	Channel No.
Orange Striped	8
Orange	7
Green Striped	6
Blue	5
Blue Striped	4
Green	3
Brown Striped	2
Brown	1

Table 1

Do not forget to paste the provided sticker listing the above table inside the switch board for future reference. It is also recommended to use wire marker tags numbered 1-8 on the wires connecting to the 'C' terminals of switches on the switch board side. This will help in identifying the channel number while connecting devices.

3. Devices Connection

Of the three wire holes provided on the bottom of the controller ***(Fig. 5)***, remove one metal cap to allow for wires inside the controller. From the switches on the main board, bring one wire from N/O terminal of each switch to the controller and terminate on to the device connectors numbered 1-8; bring another wire from N/C terminal of each switch to the controller and terminate on to the remaining device connectors numbered 1-8.

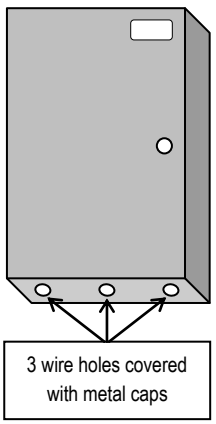


Fig. 5

For example, if you want to connect the CFL in your bedroom to Channel 1 of the Velvet controller, then, ***as shown in Fig. 6,*** take a wire length and,

a. on the switch board side connect one end of the wire to the N/O terminal of the two-way switch for tube light, and
b. on the controller side connect the other end of the wire to the left connector of two connectors marked as '1' on the controller.

Next, take another wire length and,

c. on the switch board side connect one end of the wire to the N/C terminal of the two-way switch for tube light, and
d. on the controller side connect the other end of the wire to the right connector of two connectors marked as '1' on the controller.

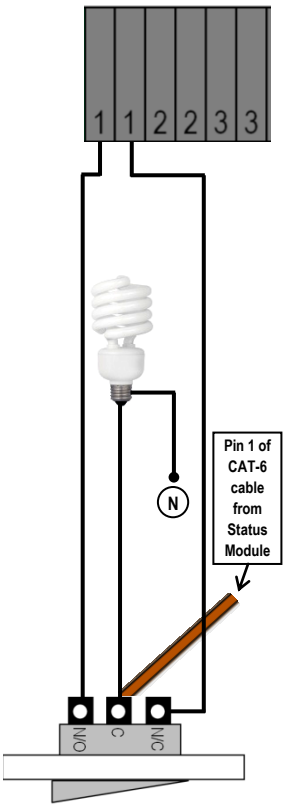


Fig. 6

Before connecting to the controller relay connectors, please make sure the C terminals of all the switches are connected to the respective devices only and not to PHASE or NEUTRAL of 230V AC Mains power line.

4. Dimmer Connection with Fan/Light

The dual dimmer module inside the Velvet controller has two independent dimmers which can be used to dim AC fans with operating wattage of not more than 250 Watts. It can also be used to dim incandescent filament bulbs up to the same power rating.

The devices need to be connected in series with the dimmers in the same manner as normal dimmers ***(Fig. 7)***.

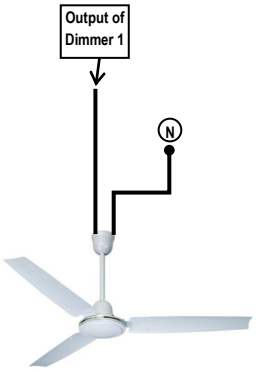


Fig. 7

5. Wi-Fi Configuration and Testing

The controller Wi-Fi has preset IP address of 192.168.1.100 and is set to join the PACS router by default. The engineer should set the controller Wi-Fi to join the SSID of the router to which it needs to connect and also feed in the security key using the following commands,

```
set comm open *OPEN*
set comm close *CLOS*
set comm remote *HELLO*
set comm time 5
set ip protocol 2
set ip dhcp 0
set ip flags 0x6
set ip address <IP ADDRESS>
set ip gateway <ROUTER IP ADDRESS>
set ip netmask <NETWORK SUBNET MASK>
set ip host <ROUTER IP ADDRESS>
set wlan phrase <ROUTER SECURITY KEY>
set wlan ssid <ROUTER SSID>
set wlan join <ROUTER SSID SERIAL NUMBER>
set ip localport 9000
set ip remote 9000
save
save user
reboot
```

6. Router Configuration

The Velvet automation controller talks to the Android device on port 9000. The router must be configured with port triggering on port 9000 for TCP data traffic.

Set the start and end ports on both triggering and opening port ranges at 9000 and the protocol to TCP. Save configuration and reboot.

7. IR Blaster Installation

The Infra Red Blaster can be used to send IR commands to the Velvet IR Relay, Velvet IR Dimmer, Velvet IR-IR module and other IR controlled appliances. It is capable of covering a distance of 15-20 meters in ideal conditions and has angled emitters for multi-dimensional throw so as to leave no uncovered area in the room. It should be strategically mounted on the top corner of the room which is on the opposite side of TV or other IR controlled devices/appliances. It can be pasted on to the corner walls with the already pasted double side foam tapes.

It is advised to test the working of all IR devices through Velvet IR Blaster for proper reach of infra-red rays to the devices before pasting it on to the corner walls. Removing the pasted Velvet IR Blaster may damage the wall decor.

8. IR Reader Installation

It can be used to program the controller using IR remote of IR appliances/devices like TV, AC, set-top box, music system, X-Box, etc. For installations with Velvet IR Remote, the IR Reader should also be located strategically, so as to be able to catch IR signals from the remote easily, e.g., in a bedroom the Velvet IR Reader should be mounted opposite to the bed and also opposite to the entrance gate of the bedroom.

9. Wireless Switch Installation

The Velvet Wireless Switch has been designed for plug-n-play use. It can be used to switch ON/OFF any electrical device which is connected to a separate switchboard so that extension of wire from remote switchboard to the main switchboard can be avoided. It can also be used to control more devices if all relay connections in the Velvet Automation Controller are consumed. For hidden installations, a female socket can be used to power up the device.

Each Wireless Switch module is supplied with an ID printed on the back of it. This ID is required at the time of configuration of Velvet Android application.

10. Wireless Dimmer Installation

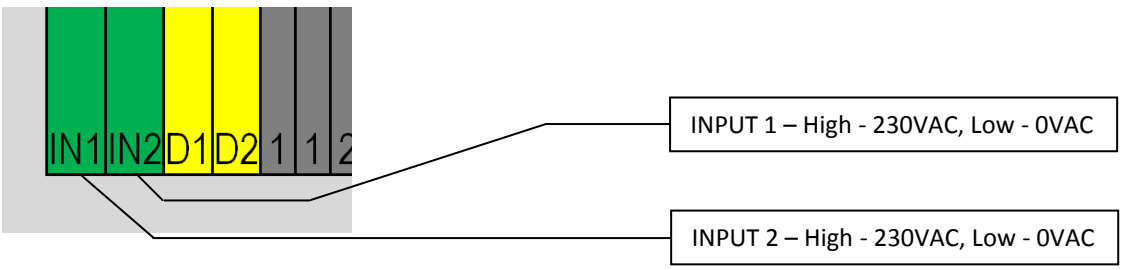
The Velvet Wireless Dimmer can be used to control dimming of incandescent lamps, filament bulbs, CFL lights, fans, etc.

Each Wireless Dimmer module is supplied with an ID printed on the back of it. This ID is required at the time of configuration of Velvet Android application.

11. IR-IR Configuration, Installation and Testing

12. Connecting Inputs

The Velvet Automation Controller is capable of connecting to two sensor inputs. These inputs can be used to trigger alarms, video, scenes, etc. These inputs are 230V AC inputs and can be connected to the output of most sensors that provide direct output to the device to be controlled.



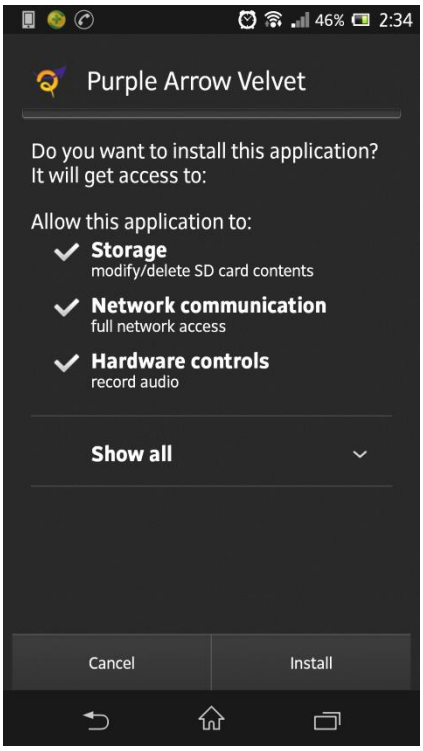
Software

Velvet

The app has been designed keeping in view the user requirement and ease of use and configuration. It allows adding controllers, rooms, devices and configuring them very easily. The interface is clean and simple and easy to operate. Scenes can be added and edited whenever required.

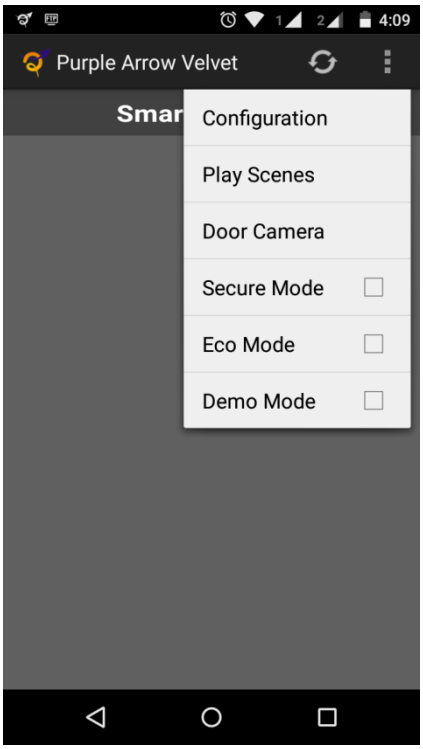
1. Installation

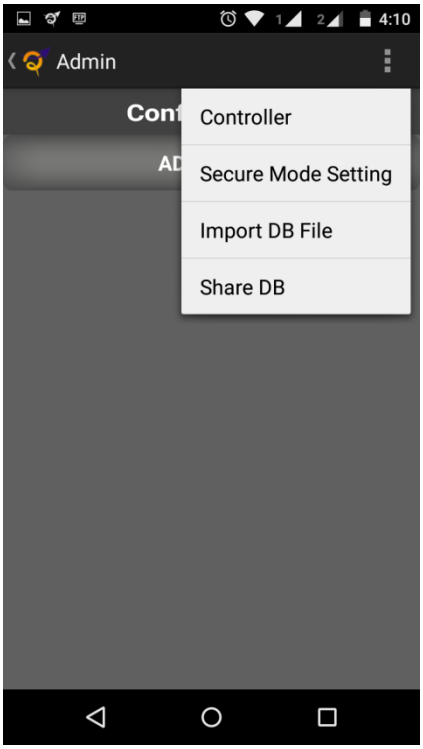
Install the app from the .apk file supplied. You may need to allow 'Install from unknown sources'.



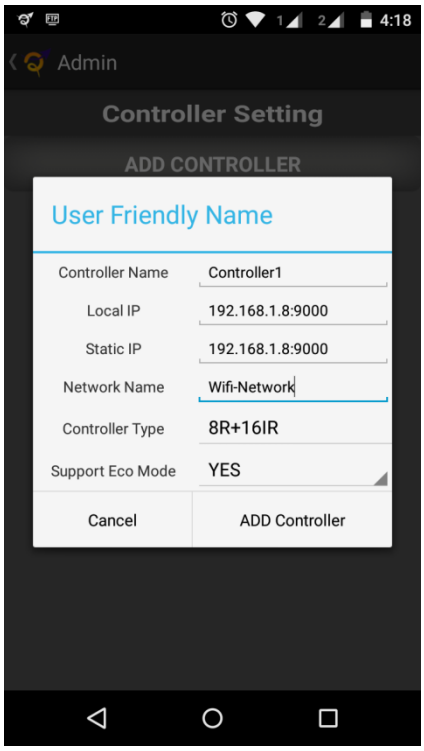
2. Adding Controller

On the first screen, click on Menu and go to Configuration





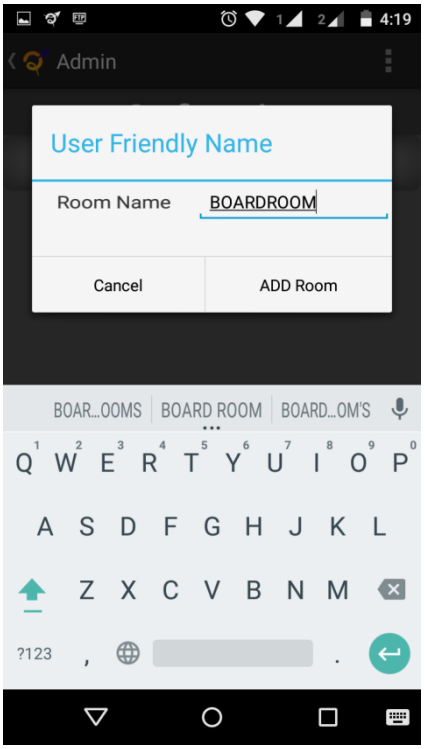
In the Configuration screen, click on Menu again and go to Controller



In the pop-up window, type in the Controller Name as desired and enter the Local IP Address of this controller as set at the time of Wi-Fi configuration. If there is any Static IP associated with the controller, then, enter it otherwise enter the Local IP again. Then enter name of the Wi-Fi network to which the controller is connected. After that, select the controller type. Finally, specify whether the controller supports Eco Mode or not and then click on ADD Controller.

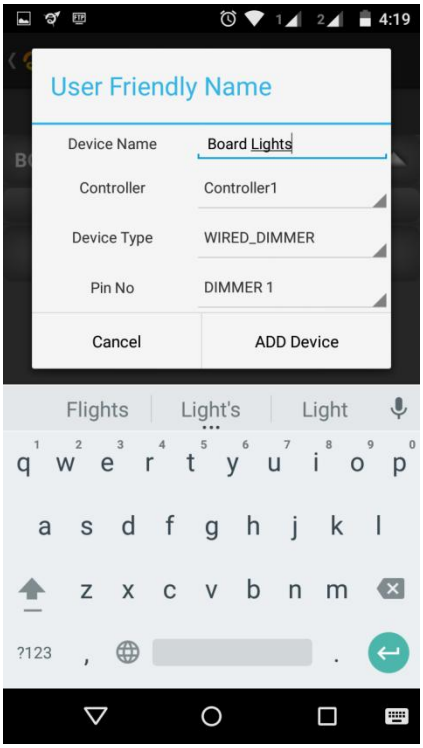
3. Adding Room

Click on ADD ROOM and type in a desired room name and click on ADD Room.



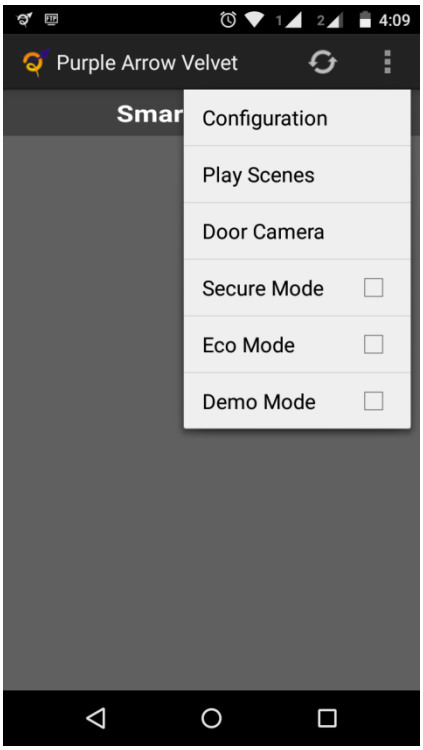
4. Adding Device

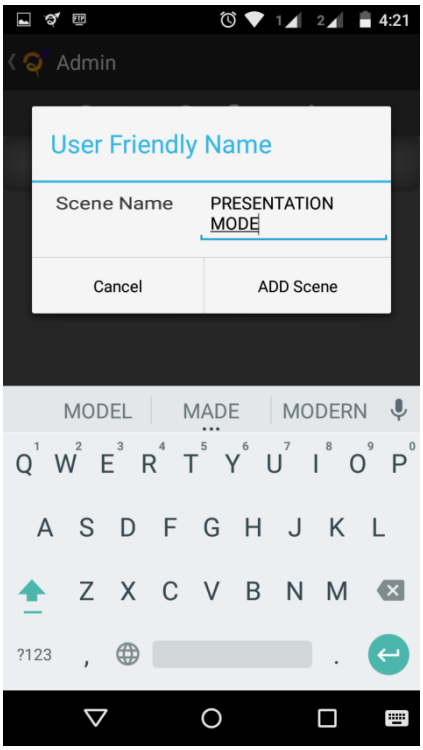
Under the room just configured, click on ADD DEVICE and in the pop-up window, type in the Device Name as desired and select the Controller. Then select the Device Type and Pin No. (The pins already used do not show in the list.) Then click on ADD Device.



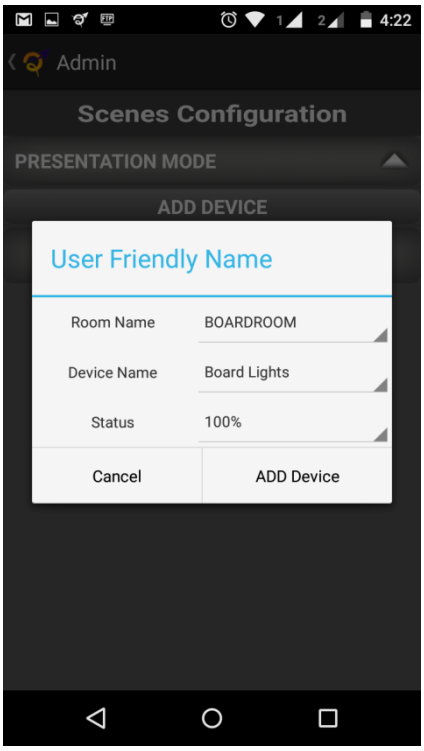
5. Adding Scene

On the first screen, click on Menu and go to Play Scenes > On the Smart Scenes screen, click on Menu and go to Configure > Click on ADD SCENE and type in a desired Scene Name and click on ADD Scene to exit.



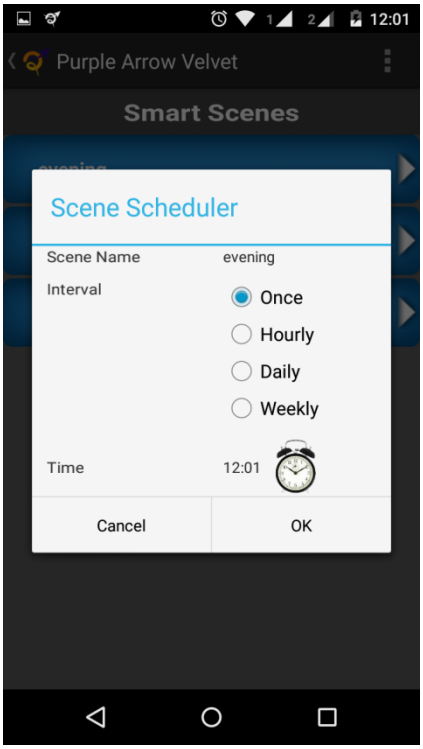


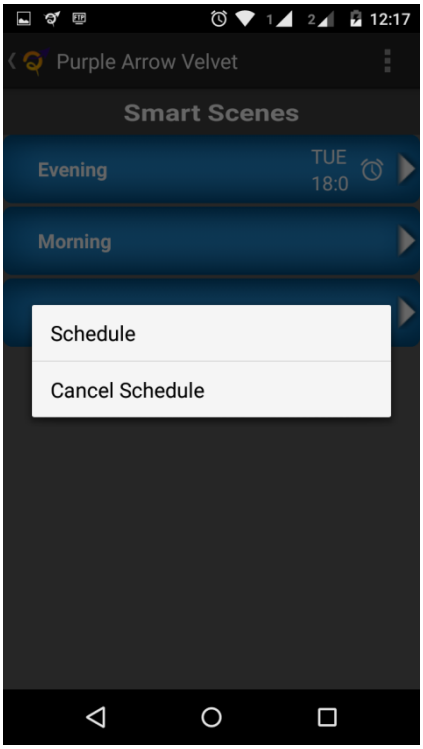
Next you can add devices with their desired status to the scenes.



6. Scene Scheduling

To schedule a scene long touch a scene until a pop-up comes > Click on the Schedule and then provide the type and time for the schedule.





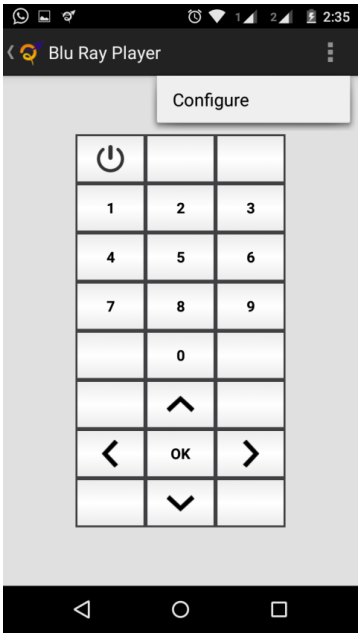
7. Generic Remote

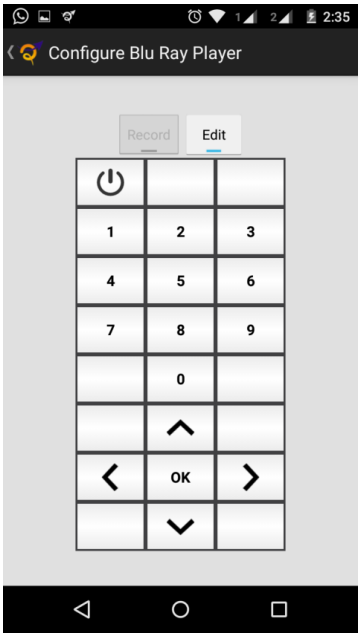
If pre-defined remotes do not meet your requirements then Generic Remote can be used. It can be added to the device by choosing 'IR_GENERIC_REMOTE' in device type.

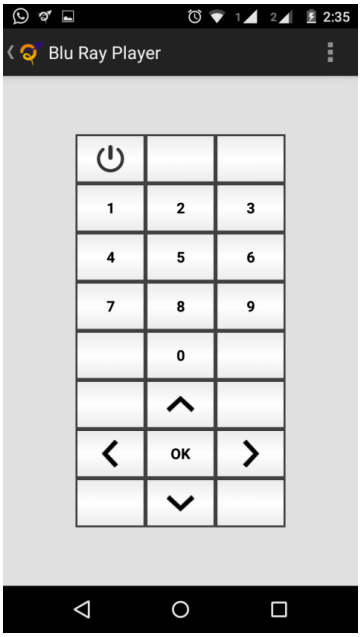
To program the buttons on the remote screen click on menu and then select configure.

On configure screen two buttons have been provided,

a. Record Button - to record the codes of IR remote
b. Edit Button - To edit the name of remote buttons. To edit a button click on it and then enter new name for it and then press OK.







8. Eco Mode

On the first screen, click on Menu and then on Eco Mode. A pop-up will appear where it can be set to ON or OFF.

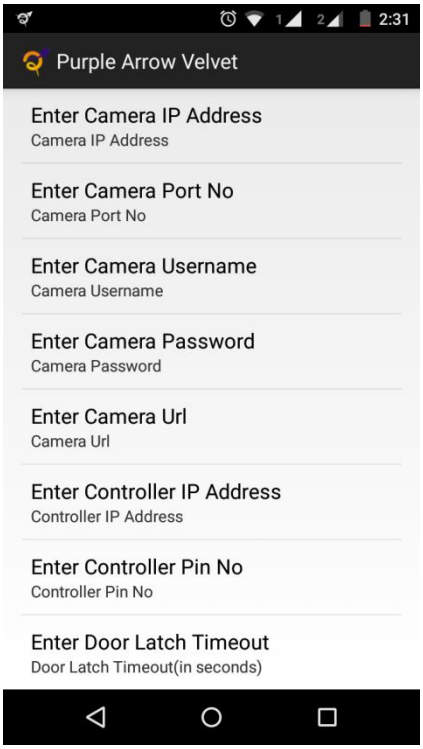
9. Secure Mode

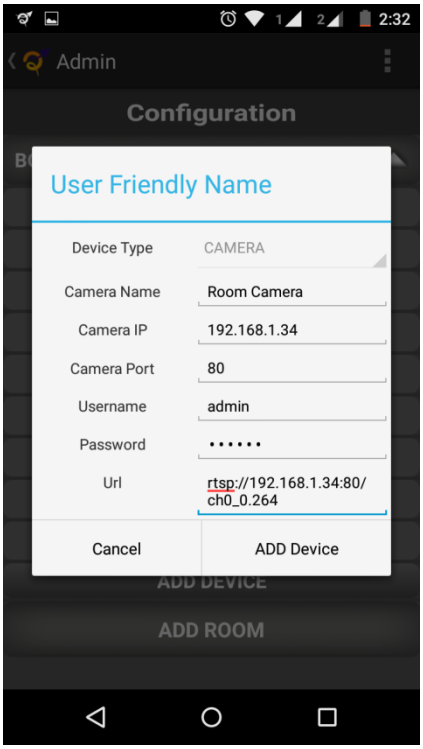
For Secure Mode firstly update settings in the configuration screen. On the first screen, click on Menu and then on Configuration. In the Configuration screen, click on Menu again and go to Secure Mode Setting and then update the settings.

On the first screen, click on Menu and then on Secure Mode. A pop-up will appear where it can be set ON or OFF.

10. Camera Setting

To be able to view the door camera, you need to configure the camera on Velvet as shown below,

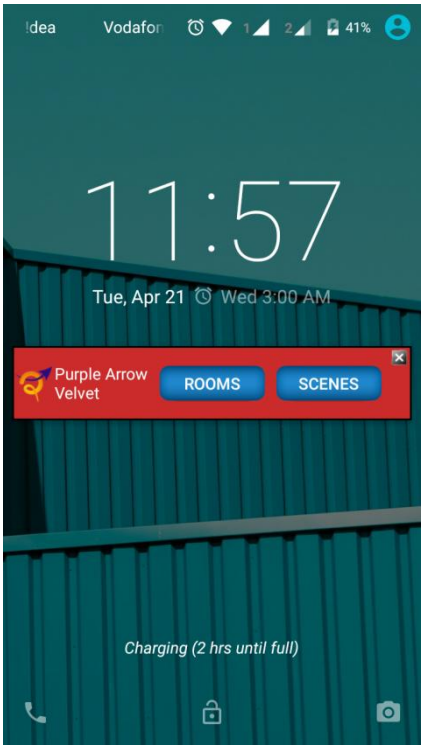




Note that the camera configuration settings differ from manufacturer to manufacturer. To get the correct settings, please contact the Velvet support team.

11. Notification

The application comes with an ongoing notification through which rooms and scenes can be accessed directly from notification area.



Error Codes

The message toasts that show on the UI several times contain an error code, if it is an error message. These error codes are helpful in identifying the cause of the problem. Such error codes are listed in the table below along with their respective meaning and the corresponding action.

Error Code	Message	To Do
302	Device not available. Refer user guide.	1. Check if the device being controlled is physically present and is connected. 2. Contact dealer.
303	Comm. bus failed. Refer user guide.	Contact dealer.
304	Comm. bus failed. Refer user guide.	Restart the controller and try again. If problem persists contact dealer.
305	Comm. bus failed. Refer user guide.	Try to control after a small gap. If this code is repeated several times, contact dealer.
306	Comm. bus failed. Refer user guide.	Contact dealer.
307	Comm. bus failed. Refer user guide.	Contact dealer.