FORBIX SEMICON ®
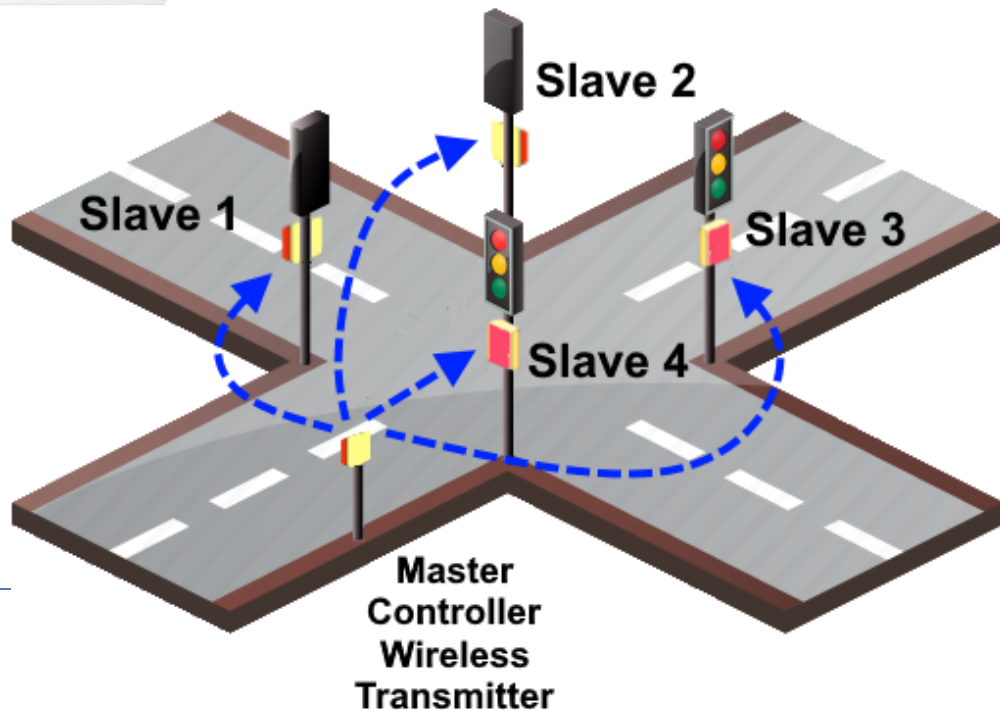

Model: FBXTLC-K (series)

Automatic Traffic Light Controller – K (series)

- 1 master controller + 4 slave controllers
- 6 lights per pole

(supports maximum road junctions)

Red / Amber / Green-Left / Green-Center / Green-Right / Pedestrian

- Wireless communication between master controller and slave drivers

Prime Features:

- Timing sequence is programmable using SDCard
- Internal RTC
- WiFi interface to synchronize RTC to internet time
- Possible to configure for 2 roads / T-junction / Y-junction as well
- Secured wireless communication between traffic light poles

Slave 2

Slave 1

Slave 3

Slave 4

Master Controller Wireless Transmitter
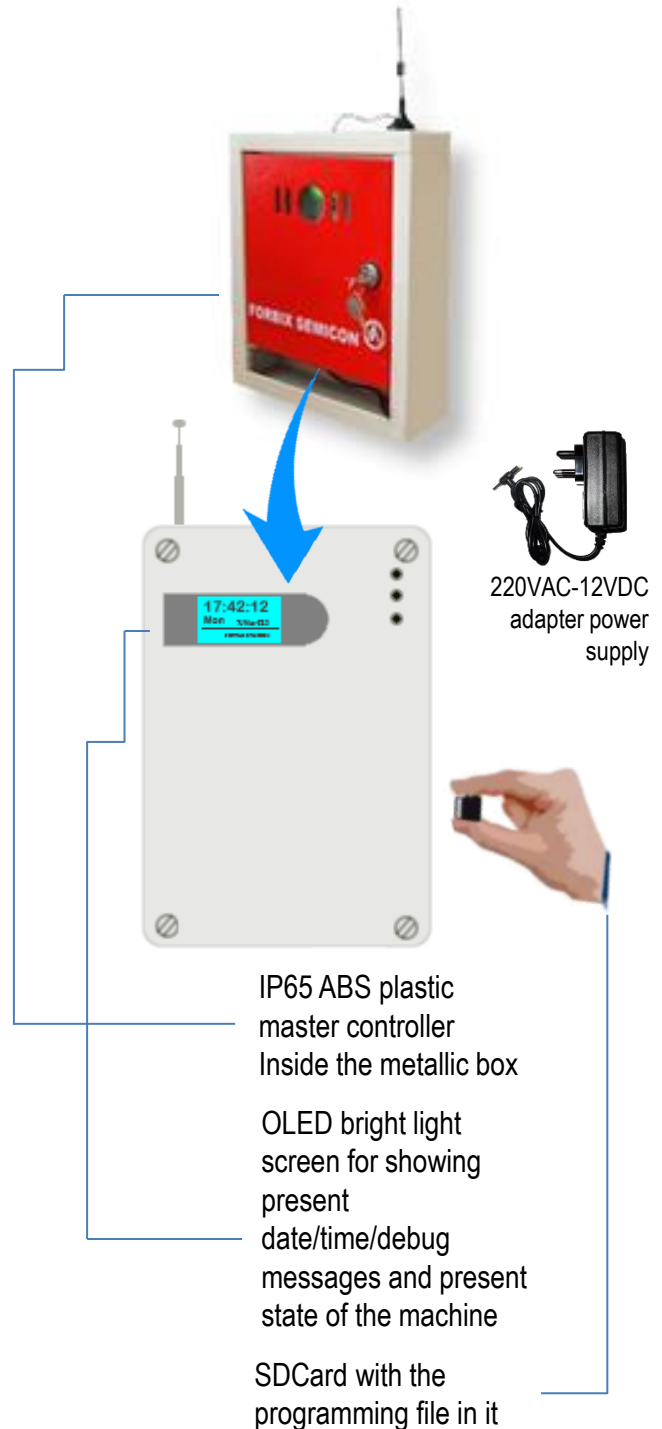
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Master Controller features

- Master controller internal components:
1. Wireless RF transmitter capable of transmitting signals up to a distance of 300 meters in open line of sight
2. Internal RTC (Real Time Clock) to control traffic sequence
3. OLED (0.96 inch) for ongoing pattern sequence, debug messages and present date / time
4. SDCard interface for dynamically programming the device
5. LEDs for power supply, transmitting sync signal and error indication
- Programmable time for the following:
   o Time for every road movement
   o Pedestrian duration
   o Flasher ON/OFF timings

- All timing configurations need to be written in a file "command.txt" and stored in a micro-SD-card
- Master controller launches WiFi hotspot to which user can connect and synchronize the internal RTC to internet clock
- Secured radio transmission with CRC, FEC

Configuration: (content of command.txt in SDCard)

```
Cycle Road 1 15
Cycle Road 2 20
Cycle Road 3 20
Cycle Road 4 25
Cycle Ped 10
Flash 23:00:00 1
Flash 07:00:00 0
```
_____

Means: Road 1 active for 15 seconds, Road 2 for 20, Road 3 for 20 and Road 4 for 25 seconds respectively. Pedestrian lights turn ON at the end of the cycle for 10 sec. At 11PM all slave flash lights will turn ON and flashing amber will turn off at 7AM next day morning. Roads turn ON in a clockwise manner.

220VAC-12VDC adapter power supply

IP65 ABS plastic master controller Inside the metallic box

OLED bright light screen for showing present date/time/debug messages and present state of the machine

SDCard with the programming file in it

Operating voltage:
12 volt DC @ 2Amps. Supported with DC jack and power supply adapter
Dimensions:
Enclosure type: IP 65 (color grey)
Size: 290 x 250 x 125 mm
Weight: 1280gms

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Slave Driver Controller features

- Slave driver internal components:
1. Wireless RF receiver capable to decode master controller signals from a distance of 300 meters in open line of sight
2. Internal controller clock to count seconds and hold delays for the lights
3. Potential free contact port relays 2/3/4/5/6/12 for driving the lights

Possible Configurations

2 port relay: Pedestrian RED / Pedestrian GREEN

3 port relay: RED / AMBER / GREEN

4 port relay: 2 sets of Pedestrian lights (one set facing each side of the road) RED / GREEN

5 port relay: RED / AMBER / GREEN-left / GREEN-center / GREEN-right

6 port relay: RED / AMBER / GREEN-left / GREEN-center / GREEN-right / Pedestrian Light
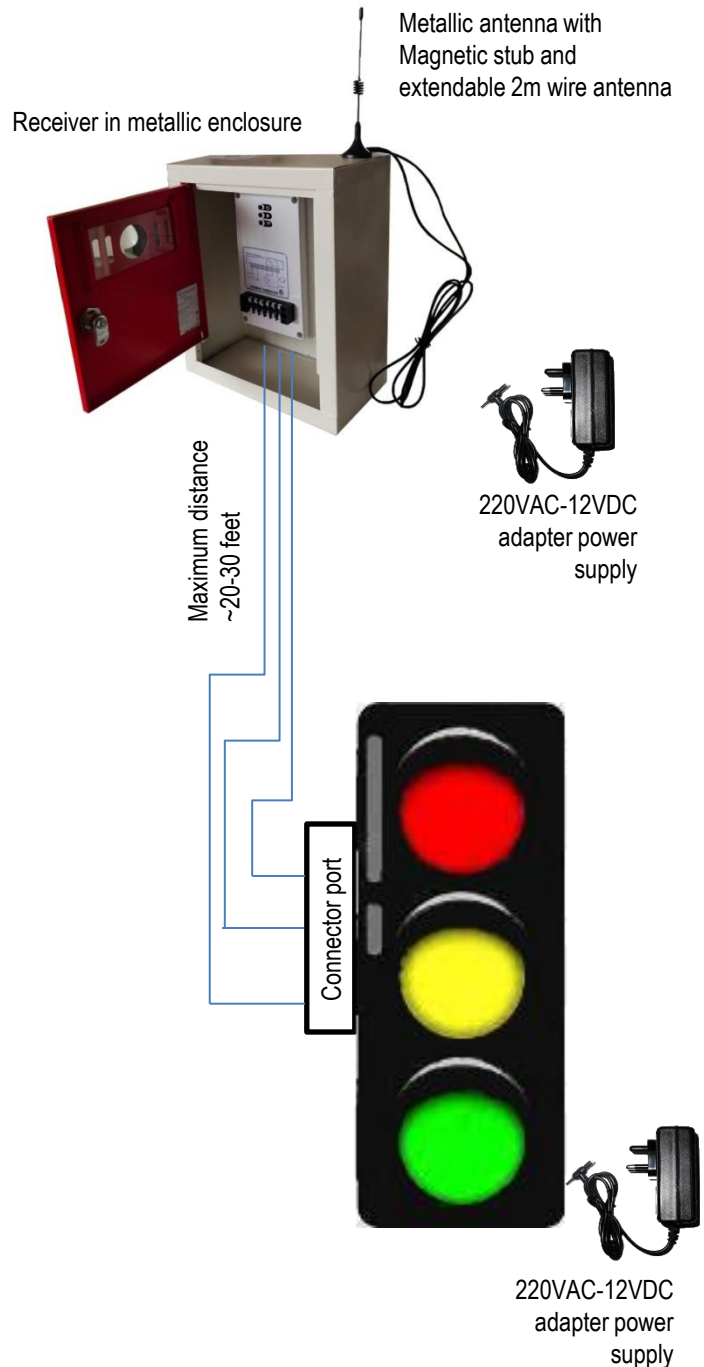
(each relay max capacity is 7 Amp / 230VAC)

Debug indicator LEDs:

- Power supply
- SYNC receiver indicator
- Error indicator

Primary / Secondary Configurations:

- The **K-series** of slave deriver device supports only primary traffic lights
- The next version (**S-series**) of slave devices supports double the number of ports and therefore, both primary and secondary configurations simultaneously from the same receiver device.

Wiring diagram

Metallic antenna with Magnetic stub and extendable 2m wire antenna

Receiver in metallic enclosure

Maximum distance ~20-30 feet

Connector port

220VAC-12VDC adapter power supply

220VAC-12VDC adapter power supply

Operating voltage:
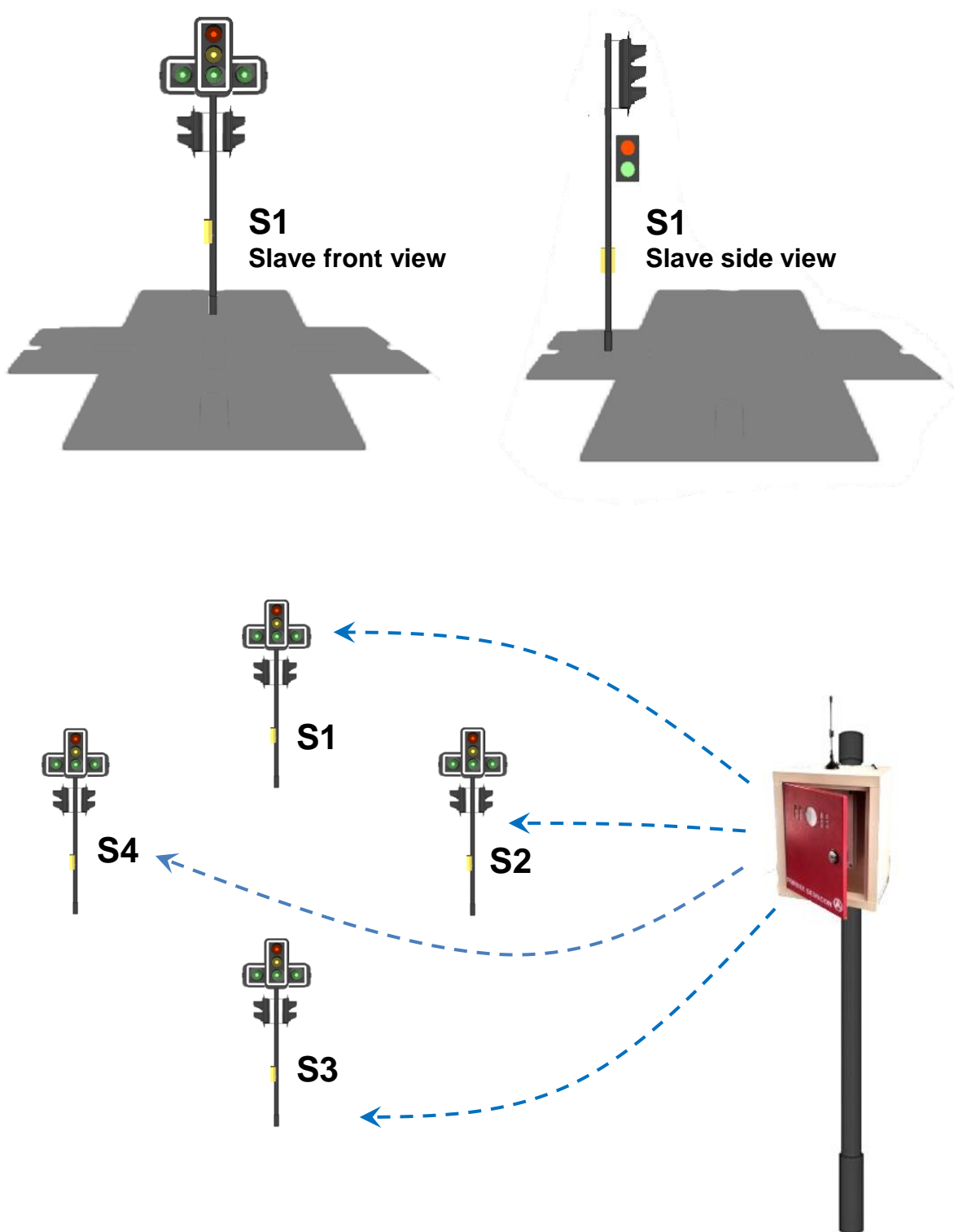12 volt DC @ 2Amps. Supported with DC jack and power supply adapter
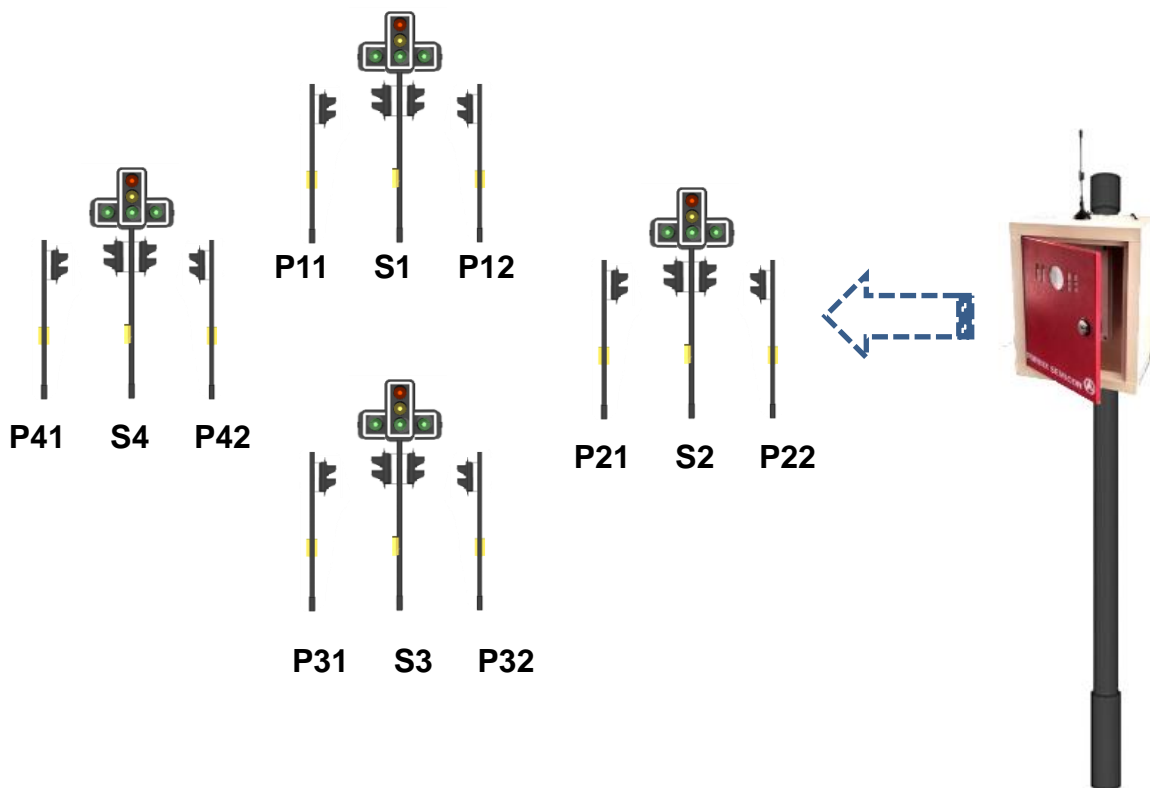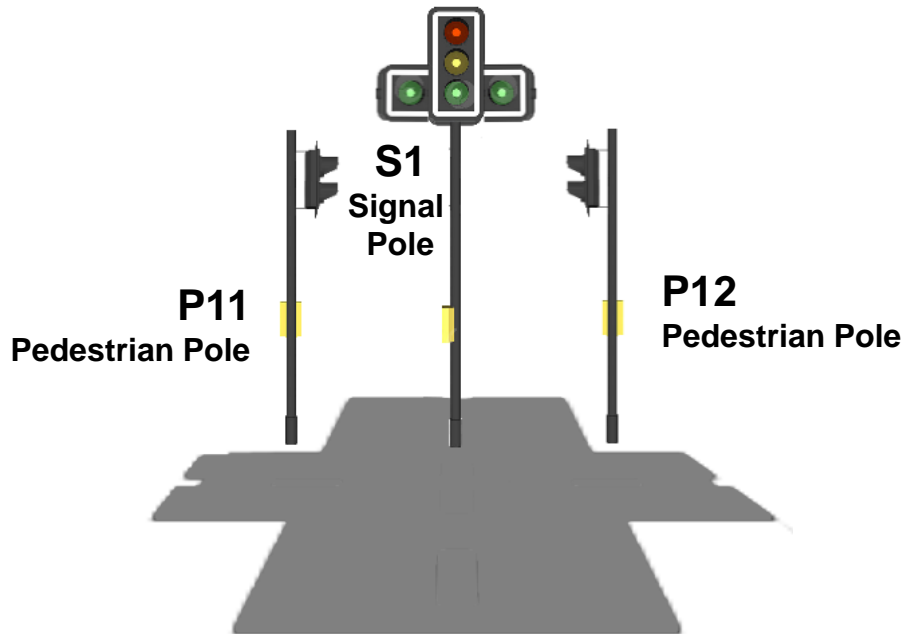**Dimensions:**
Enclosure type: IP 65 (color grey)
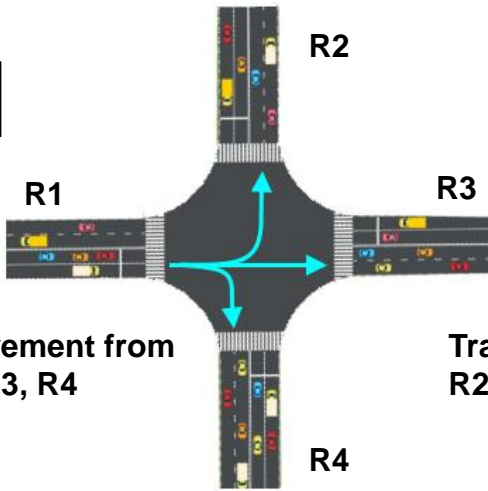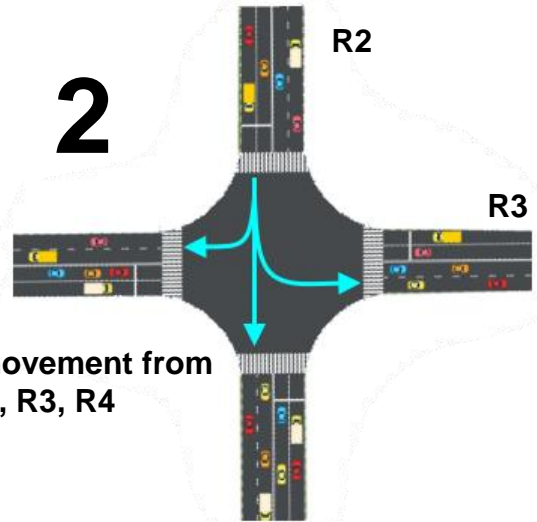Size: 290 x 250 x 125 mm
Weight: 1280gms

Orientation 1

S1
Slave front view

S1
Slave side view

S1

S4

S2

S3

Orientation 2

S1
Signal Pole

P11
Pedestrian Pole

P12
Pedestrian Pole

P11   S1   P12

P41   S4   P42

P21   S2   P22

P31   S3   P32

Traffic Patterns

1

R2

R1

R3

R4

**Traffic movement from
R1 to R2, R3, R4**

2

R2

R3

**Traffic movement from
R2 to R1, R3, R4**

3
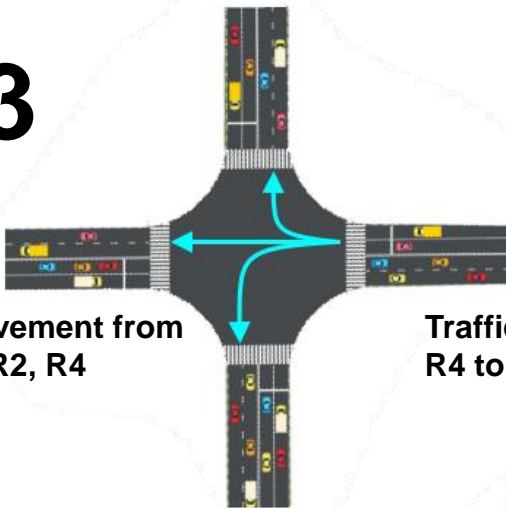
**Traffic movement from
R3 to R1, R2, R4**

4
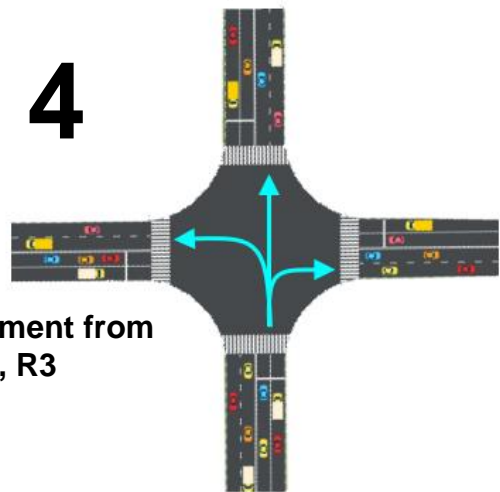
**Traffic movement from
R4 to R1, R2, R3**

5

**Pedestrian crossing at the junction
All four roads R1,R2,R3,R4 closed
for vehicle movement**