

# S1 Access Control Gateway Datasheet



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## Information

S1 Access Control Gateway is used to connect the door locks and Access Control Readers to the KAS cloud.

The gateway(s) need to be within range of all of the online devices which is best achieved by placing them in central and unobstructed locations.

1. Mount the gateway to the ceiling using the supplied bracket. (Clip on).
2. Ensure the antenna is not covered or blocked by metal objects or any other obstructions such as concrete beams which could dramatically reduce the effective operating wireless range. Like any wireless protocol device, the optimal results will be achieved when within direct line of sight and the closest proximity (range) from the target devices.
3. Connect the gateway to the network by either LAN cable (wired solution) or WIFI wireless solution (see below)
4. Connect the power adapter to the gateway if not using LAN PoE (Power over Ethernet)

## Technical Specifications

Operating Temperature	-25 to 70 °C
RF Frequencies	2.4 GHZ (BLE), 915MHz (Sub-1, AU)
Power Input	Min:5V Max:12V DC or PoE (Power over Ethernet LAN cable)
Peak Power Consumption	1A
Nominal Power Consumption	<340mA
Housing Dimensions	Diameter: 168 mm, Height: 45 mm
Weight	0.4 Kg
Mounting	Bracket installed onto the ceiling. Drop the LAN/Power cable through the center of the bracket and plug into the side of gateway.
Supply	Gateway, Fixing Bracket, 3 Screws

## Images

Top view: See the image on the front page.

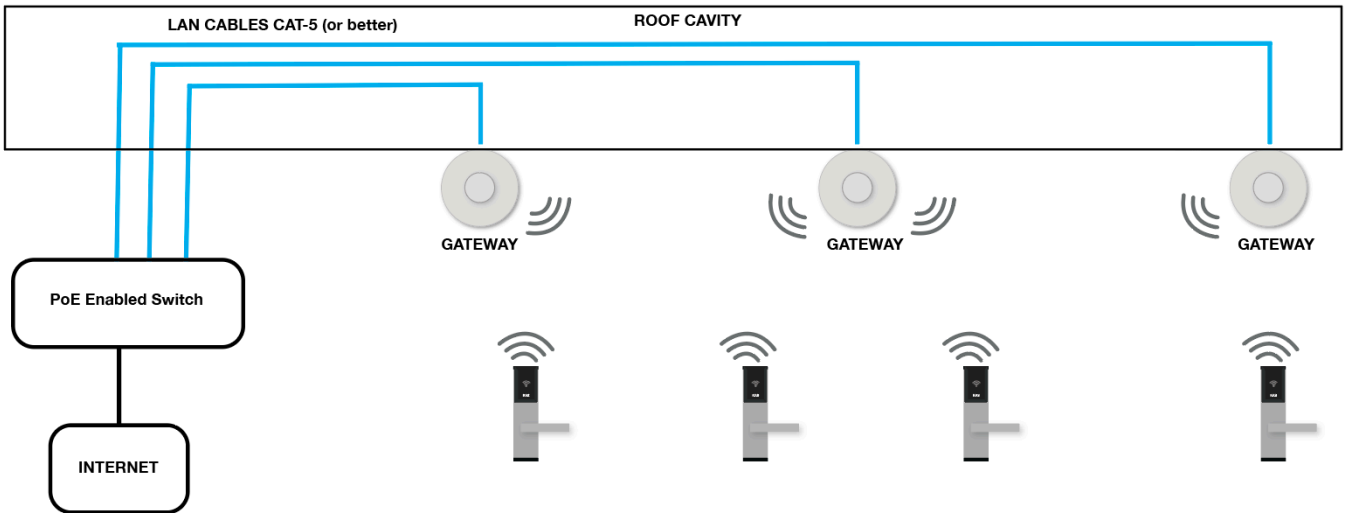


## Wiring and Cabling

There are 3 cabling/wiring options for data and power.

### Option 1: LAN PoE (Preferred Option)

Cat-5/6 PoE LAN cable with active DHCP network (cable endings to be patched with a fly cable). Each Gateway required to be individually supplied by an independent LAN cable from the site internet patch panel rack.

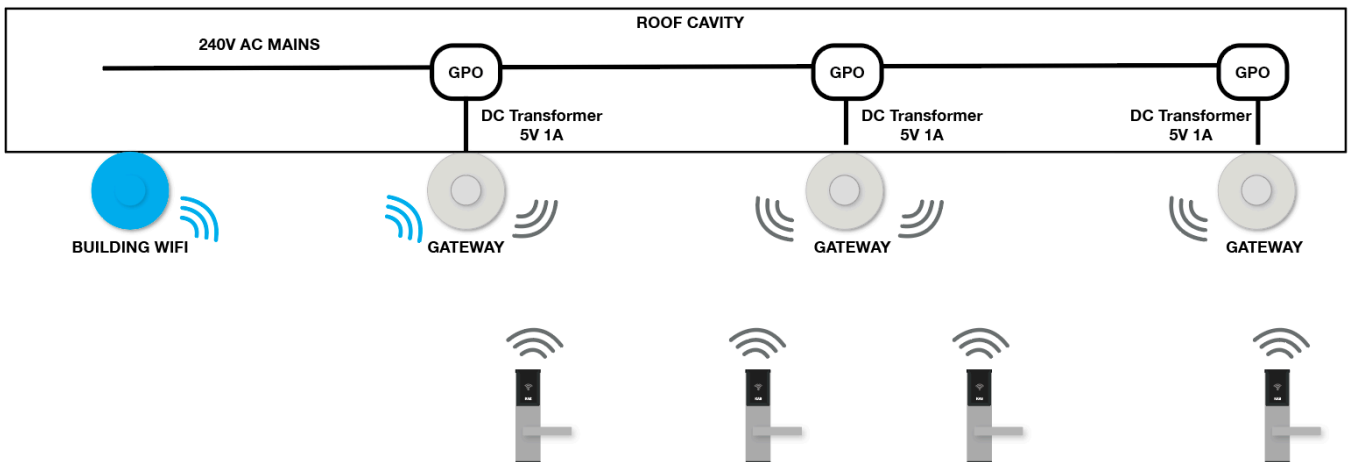


### Option 2: WIFI + GPO - 240V AC Power Point with a AC/DC transformer

GPO 240V AC GPO with DC transformer at each gateway location, located within building WIFI range. The gateway can then be linked wirelessly to the site WIFI system.

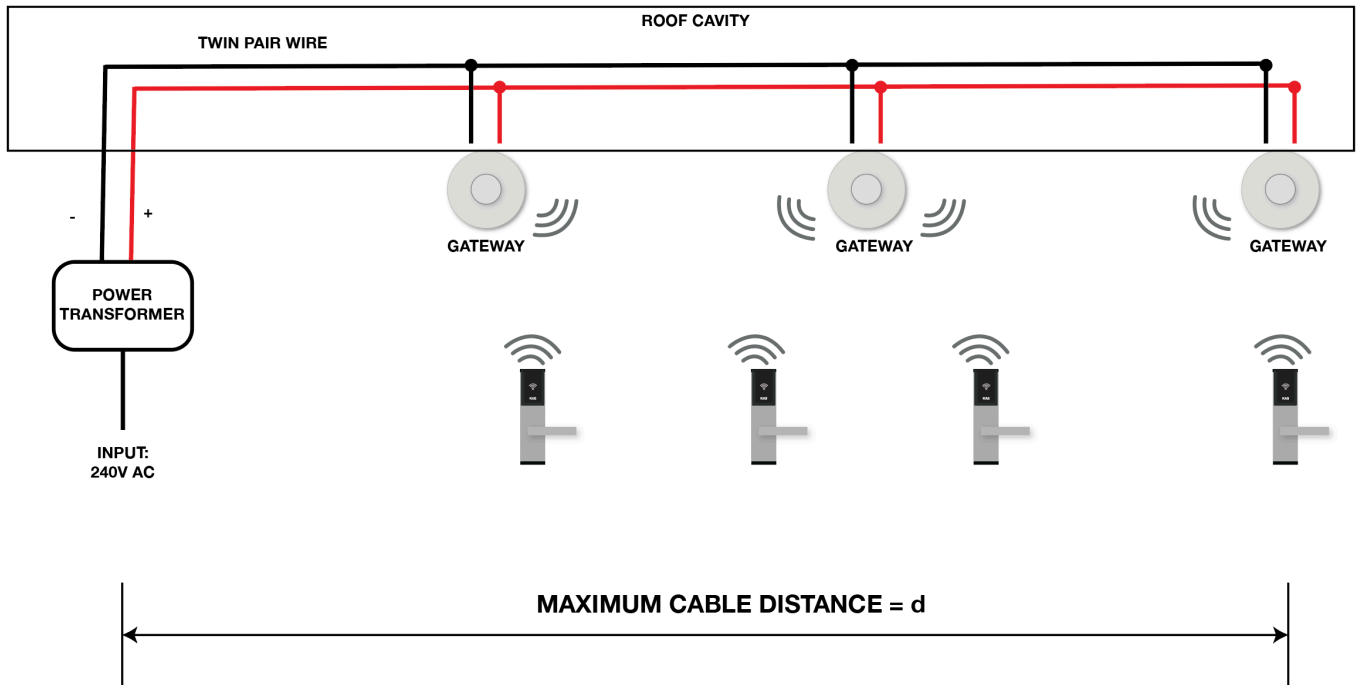


Power supply: AC/DC Transformer 5V 1A plug (if supplied):



**Option 3: WIFI + DC Input - Connecting multiple gateways in series using a DC loop cable from remote DC Transformer**

Twin wire pair cable connected in series between multiple gateways powered from a single transformer per floor. This option is ideal for existing sites where multiple gateways are located on each floor that can then be supplied from a single AC/DC transformer. This option prevents the additional cabling/time/cost requirements of running independent Cat 5 cabling to each individual gateway from the existing LAN Patch panel, most often located quite remotely away from most floors.



Gateway power input is connected with a DC plug tail (if supplied).



- Consider cable voltage drop if using Option 3.
- The maximum cable distance and approximate cable voltage drop can be calculated using the following design charts in Appendix A.
- See Appendix A to determine **maximum cable distance** and **number of gateways** per DC circuit.

**Wiring and Network Decision Chart**

For the above wiring options please consider the following points:

	Option 1: LAN PoE	Option 2: GPO Power	Option 2: DC Circuit
Recommended Wiring	<b>Strongly Recommended</b> for new installations and sites with many gateways. (e.g greater than 4 gateways)	Recommended when installing a small amount of Gateways.	Used for retrofit installation where LAN PoE is not possible.
Activate the Gateway with Mobile App using BLE for initial configuration	Yes	Yes	Yes
Each gateway will have its own IP address which can be configured and power cycled remotely without visiting the device	Yes	No	No
Gateway power cycles required to physically visit the gateway (sometimes enter roof cavities or comms rooms)	No	Yes	Yes
Requires DHCP only network and stable WIFI connectivity (May need a custom SSID or manual whitelisting of gateway MAC address on network for stable connectivity)	No	Yes	Yes

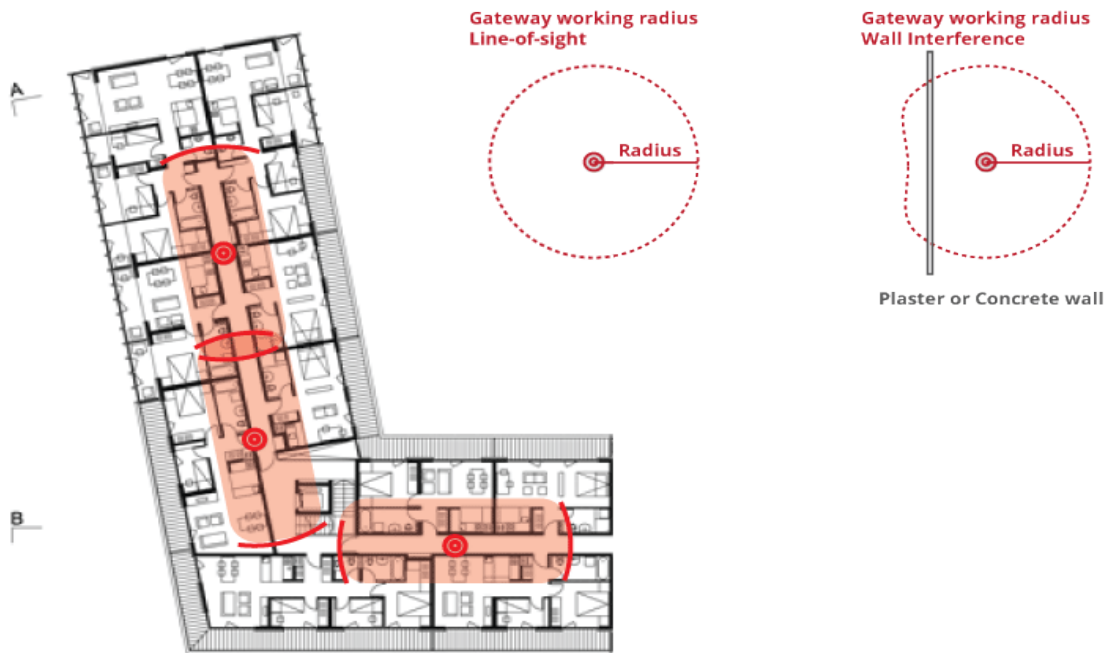
## Gateway Positioning and Mapping

Use the following parameters to determine the gateway position:

<b>Maximum Number of Locks per Gateway:</b>	<b>60 Locks</b>
<b>Recommended Maximum Gateway Range for NEO, ACR and PLATINUM Lock</b>	<ul style="list-style-type: none"> <li>•Unobstructed (line of sight) – 15m to 20m (Recommended 15m)</li> <li>•Obstructions – 10 to 12m</li> </ul>

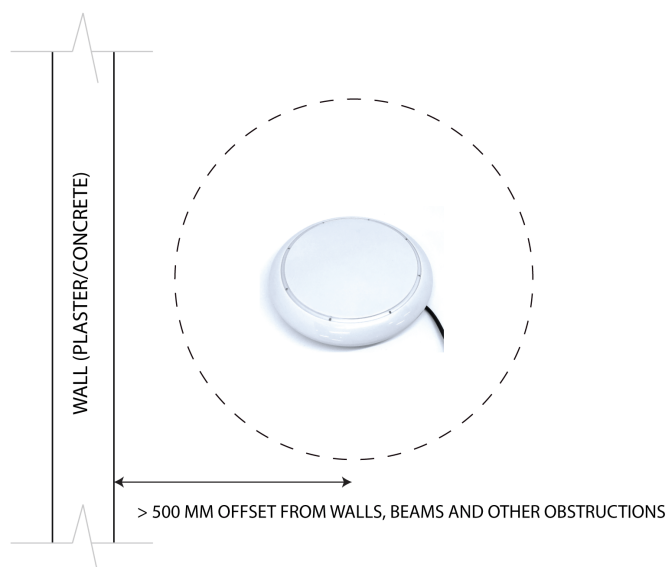
*Note: local site conditions and slight hardware and atmospheric conditions may see a variation in above quoted maximum reception ranges.*

Example site plan



### Notes for Installers

- The installers will be required to physically attach the gateways, which would normally be done following the final painting of the ceilings/walls. This task could generally be done by the same team connecting the ceiling mounted WIFI access points (WAPs).
- The gateway commissioning will be completed simultaneously by the person who is doing the final commissioning of the door locks.
- **Ensure the Gateway is installed with at least 500 mm offset from all walls, beams and other obstructions.**



## APPENDIX A – DC CIRCUIT DESIGN CHARTS

Use the following tables **as a guide** to determine a recommended Power Transformer Output for the Number of Gateway vs Cable Length.

**Table 1: DC Circuit Design Chart**

**Example Cable spec:**

- Figure 8 Cable 32/0.20 mm (1.00 mm-sq area)
- OR
- Security Cable 6 Core 14 Strand (0.43 mm-sq per core) 3 cores twisted together (1.29 mm-sq)

**Cable specs are used in the below table:** (1.04 mm-sq copper cable)

**Cable Length:** is calculated as a one-way distance to the furthest gateway. Not round trip distance.

**Maximum Peak Gateway Current Draw:** 500 mA

**Maximum Gateway Voltage Supply:** 5V – 11V DC

Note: 12V DC Power supply should only be installed when you anticipate a high voltage drop.

Number of Gateways per Circuit	Maximum Cable Distance, d (m)	Recommended Current Supply (A)				Voltage Supply (V)
		20	50	80	100	
1	1	1A	1A	1A	1A	9
2	2	2A	2A	2A	X	9
3	3	3A	3A	X		9
4	4	3A	3A			
1	1	X	X	X	X	12
2	2	X	2A	2A	2A	12
3	3	3A	3A	3A	3A	12
4	4	3A	3A	3A	X	12
5	5	3A	3A	X	X	12
6	6	5A	5A	X	X	12
7	7	5A	5A	X	X	12

X = NOT RECOMMENDED