

Product Comparison

SmoothStarter™
 VS
 airGo soft starter

January 2025

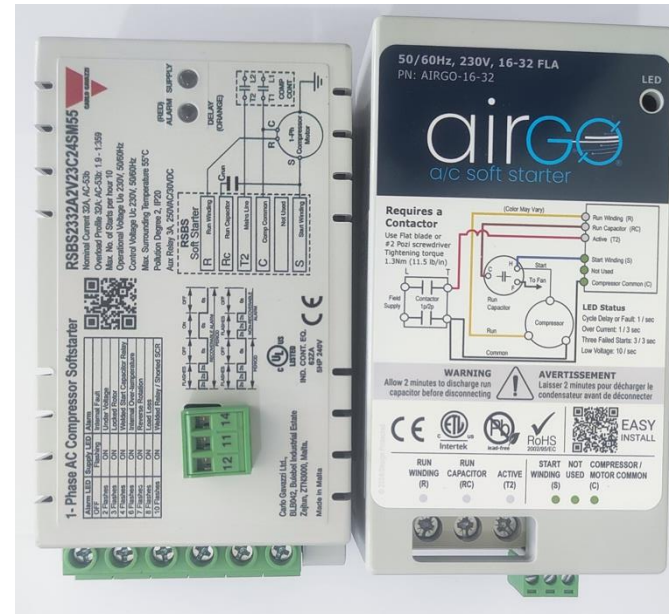


Executive summary



- We analysed the airGo soft starters and compared different features against the SmoothStarter™ as follows:-
 - **Dimensions:** Dimensions are similar
 - **Current reduction:** airGo suffers from a high peak current in the transition from ramp to bypass (see slides 7 & 8)
 - **Self-learning:** SmoothStarter™ offers a better performance
 - **Ease of installation:** Both products offer a wire harness for easier installation.
 - airGO has a color coded wiring scheme directly on the front cover that is a nice feature as it can guide the installer where each harness should be connected
 - SmoothStarter™ has a common terminal block for wire connection thereby requiring only one screwdriver size vs airGo that has different sized terminal blocks that would require at least two screwdriver sizes making the installation more time consuming.

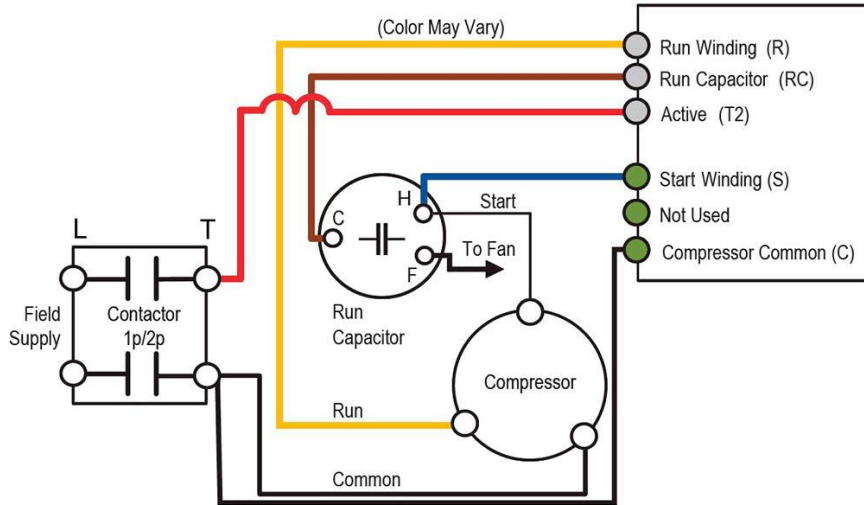
Product dimensions



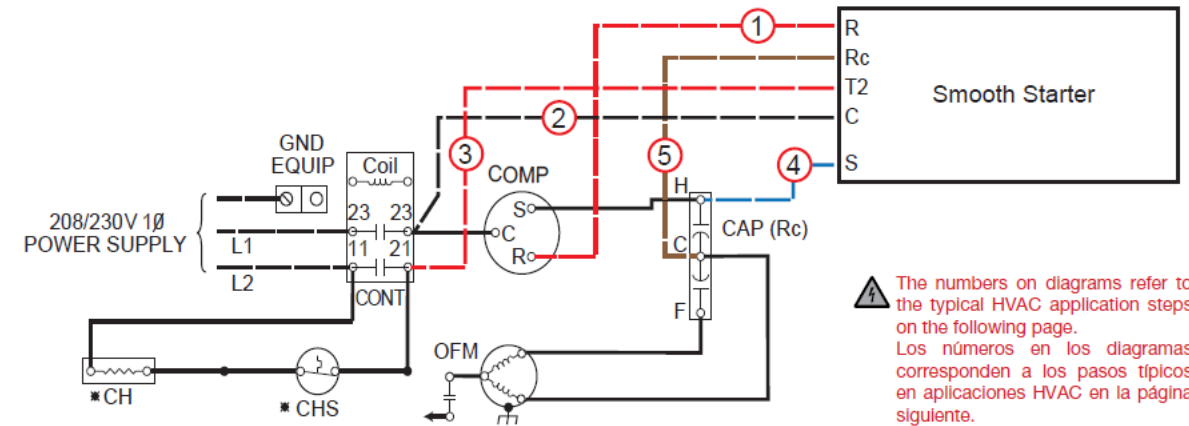
Part number	Height/ in	Depth /in	Width /in	Volume/in ³
airGo...	2.94	1.96	5.3	30.5
SS230...	2.99	2.56	5.4	44.8

Wire harness

- Both the airGo and the SS230V come with a very similar wire harness



airGo wiring diagram



SS230V wiring diagram

Ease of installation | Tools

- SmoothStarter™ : Only requires one screwdriver for installation
- airGO: Two different screwdrivers are required which makes installation more time consuming



airGo harness terminal block

SmoothStarter™ terminal block

Ease of installation | Wire harness



- **SmoothStarter™**: The termination of the red cable is a ring to have a firm connection since a lot of current flows through the red cable.
- **airGO**: The termination is a ferrule that may still “slip” when tightened to the contactor terminals



airGo wire harness kit

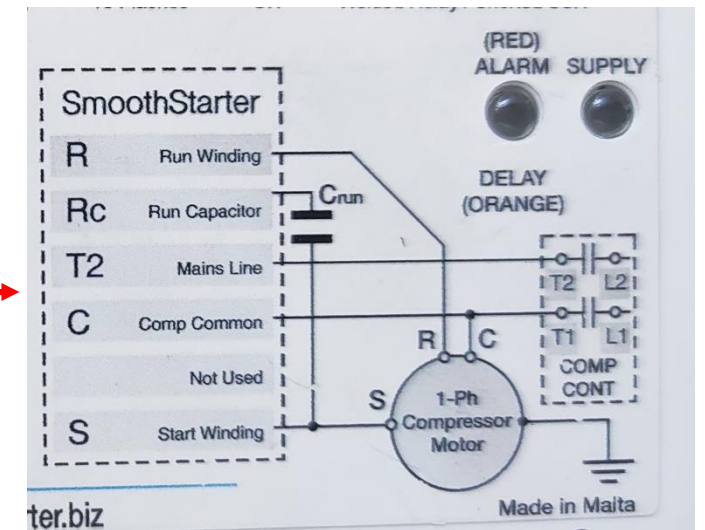
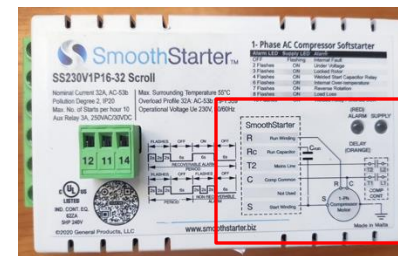
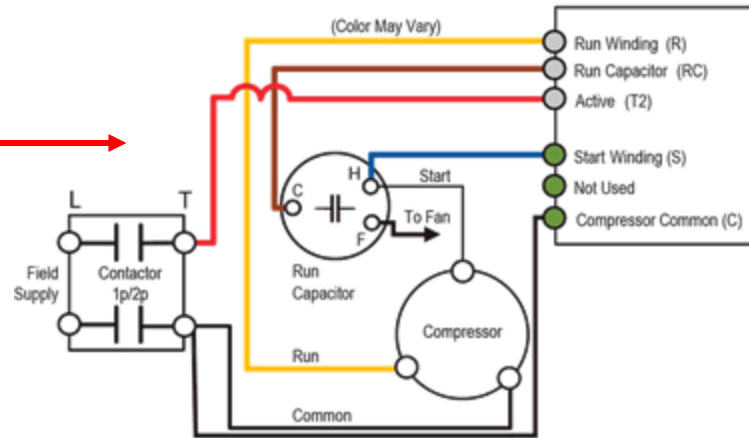
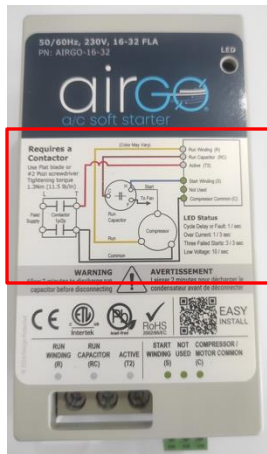


SmoothStarter™ wire harness kit

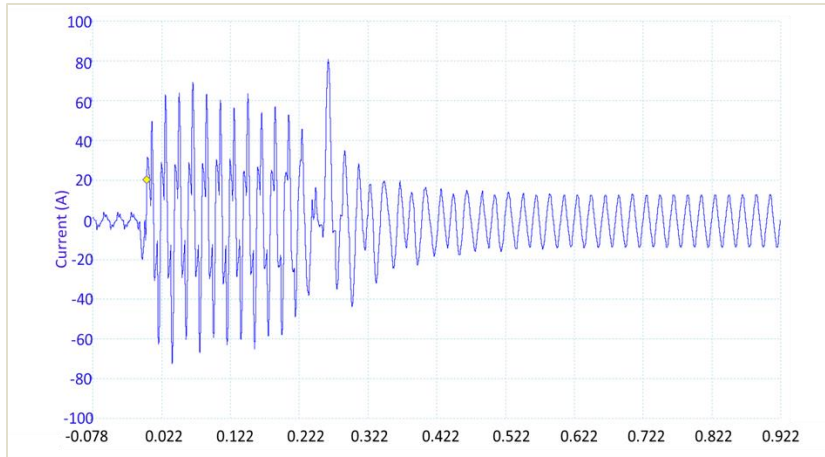
Ease of installation | Wiring diagrams



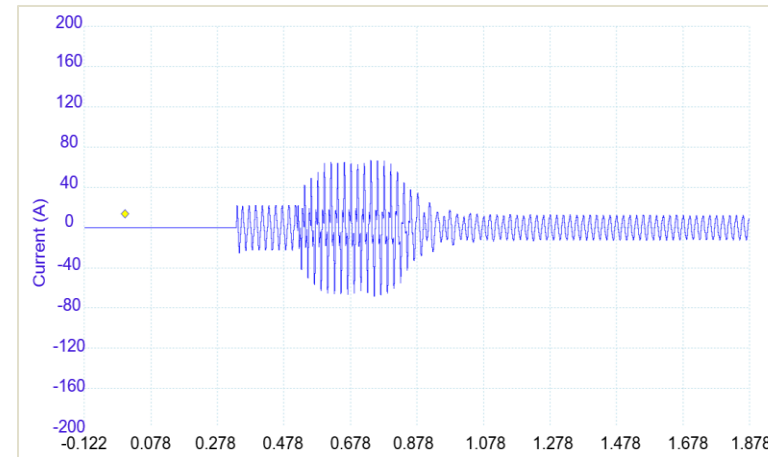
If one had to connect the soft starter by looking at the wiring diagram on the façade of the soft starter itself, both soft starters give a clear indication.



Starting performance | Current reduction



airGo 16-32A



SS230V1P08-16

Part number	Current reduction vs DOL
airGo	From 32% up to 53%
SS230V1P16-32	From 29% up to 47%

Starting performance | airGo



- The current reduction and the start times of the SmoothStarter™ and airGo are similar.
- However, the airGo frequently experiences a high current spike in the transition from ramp up to bypass. Sometimes this spike exceeds the starting current (as shown below)
- This large current spike may cause issues on start-up of genset and possibly light flicker

airGo			
Start no.	Ipk-pk/A	Start time/ms	Current reduction
1	161.3	351.6	32%
2	143.1	385.3	40%
3	153.6	386.1	36%
4	119.6	434.4	50%
5	149.7	411.1	38%
6	112.5	637.6	53%
7	120	543.1	50%

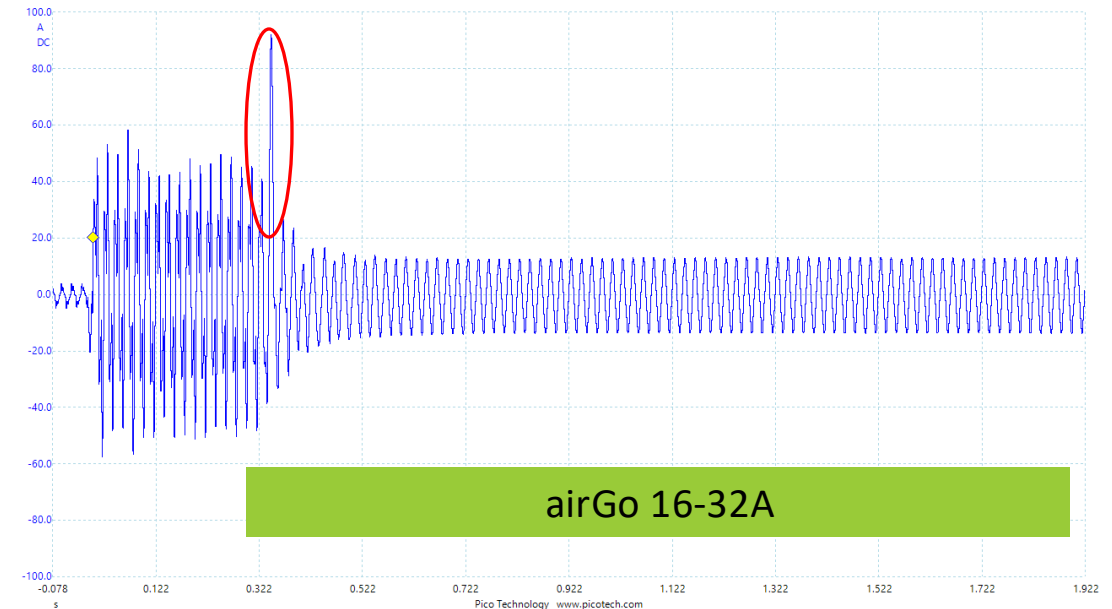


Table showing the start time and the current reduction (vs DOL) performance of airGo soft starters

Starting Performance | SmoothStarter™



- The self-learning algorithm on the SmoothStarter™ has a better transition from ramp-up to bypass

SS230V1P16-32			
Start no.	Ipk-pk/A	Start time/ms	Current reduction
1	127.3	459.4	47.1%
2	130.3	498.6	44.5%
3	129.3	543.7	46.3%
4	170.2	537.8	29.3%
5	131.2	487.7	45.4%
6	129.9	481.0	46.0%
7	129.3	481.0	46.3%
8	125.7	507.7	47.8%

Table showing start time and the current reduction (vs DOL) performance of SmoothStarter™ soft starters

Diagnostics | Fault indication



- Both Soft starters have an alarm LED that flashes with a specific sequence according to the alarm being triggered.
- The SS230V SmoothStarter™ provides more diagnostics which makes it easier to troubleshoot in case of a fault

airGo Soft Starter	SS230V SmoothStarter™
Low voltage	Under voltage
Lockout on 3 failed starts	Locked rotor
Lockout on overcurrent	Start capacitor relay protection
Cycle delay/faults	End of ramp
	Internal over-temperature alarm
	Compressor running in reverse
	Load loss
	Welded main relay, Shorted SCR, welded bypass relay