

Amp meter back to negative wire, rotor to 10mm gap

Wednesday
3A max
20 / 78
18.08
19.02
53

C210814
2021-08-18
Rotor 3, 21 / 22mm
10
CG
8
N/A
S1 (FLA 30Ah)
12.82 / 13.10*
S2 + S3 (FLA 60Ah)
13.13 / 12.87*
12.86
12.63
1.8
1.45
198 / 236
53
1.44
0.70

57.9
1.625
0.88

Increased gap to 10mm. Discharged output battery in the morning. Charged input batteries for for 1h, let it rest for 1h, then started this cycle.

*Measured after an hour

Rotor to 12mm gap

Thursday
3A max
20 / 94
10.18
11.18
60

C210815
2021-08-19
Rotor 3, 21 / 22mm
12
CG
8
N/A
S1 (FLA 30Ah)
12.83 / 13.10*
S2 + S3 (FLA 60Ah)
13.13 / 12.86*
12.87
12.63
1.81
1.37
173 / 210
60
1.59
0.63

57.9
1.59
1.00

Increased gap to 12mm. Discharged output battery previous night, Charged input batteries this morning for 1h, let it rest for 1h, then started this cycle.

*Measured after an hour

Rotor to 6mm gap

Thursday
3A max
20 / 89
20.1
20.56
45.5

C210816
2021-08-19
Rotor 3, 21 / 22mm
6
CG
8
N/A
S1 (FLA 30Ah)
12.83 / 13.10*
S2 + S3 (FLA 60Ah)
13.13 / 12.87*
12.84
12.62
2.01
1.65
224 / 267
45.5
1.39
0.72

57.9
1.83
0.76

Decreased gap to 6mm. 2h after previous cycle discharged the output battery @1A. Charged the input batteries 2h before SG cycle, for a duration of 1h (so rested 1h before start). **First couple of seconds when the SG started the output battery was not connected, stopped, and restarted with properly connected wires.** *Measured after an hour

Conclusions: increasing the gap to 10mm might increase the COP a tiny bit, but at least the amp draw is **LOWER**. What is strange is that amp draw **INCREASED** when with 12mm gap, would have expected lower amp draw. Increasing it to 12mm, decreases the COP. Reducing it to 6mm increases COP a bit, but increases amp draw. To verify this better, more runs with same setup would be necessary.

Rotor 2: 20magnet/20mm, gap to 12mm

Friday
3A max
20 / 85
18.4
20.11
91

C210817
2021-08-20
Rotor 2, 20 / 20mm
12
CG
8
N/A
S1 (FLA 30Ah)
12.82 / ??
S2 + S3 (FLA 60Ah)
13.12 / ??
12.88
12.62
1.56
1.1
180 / 189
91
2.02
0.50

57.9
1.33
1.52

Switched to Rotor 2: 20 magnet, 20mm wide magnets. Charged output battery to 15V. Amp meter back into positive wire. Discharge rate of output battery 1A. Ideal procedure: 1: SG charge / 2: wait 1h / 3: discharge output battery 1Ah / 4: wait hours / 5: TGX charge input batteries for 1h / 6: wait 1h / Start over.

Rotor 2 installed, 12mm gap. Discharged output battery **previous night**, Charged input batteries this **evening for 45min**, let it rest for 1h, then started this cycle. Stopped SG charge @ **14.93V** since it went really slow at that point (so actual COP is lower, if charged to 15V).

Rotor 2: 20magnet/20mm, gap to 10mm

Saturday
3A max
20 / 95
10.38
11.48
69

C210817
2021-08-21
Rotor 2, 20 / 20mm
10
CG
8
N/A
S1 (FLA 30Ah)
12.85 / 13.12*
S2 + S3 (FLA 60Ah)
13.10 / 12.86*
12.86
12.65
1.59
1.2
198 / 214
69
1.60
0.62

57.9
1.395
1.15

Rotor 2 installed, 10mm gap. Discharged output battery previous night, Charged input batteries this morning for 1h, let it rest for **1h53min** (instead of 1h), then started this cycle. Charge output battery to 14.93V (because of previous cycle). *Measured after an hour

As mentioned in the comments of the previous cycle: output battery was not discharged 1h after SG charge up, but after 1h53 Charge output battery to 14.93V (because of previous cycle).

Rotor 2: 20magnet/20mm, gap to 8mm

Sunday
3A max
21 / 95
9.47
10.52
63.75

C210819
2021-08-22
Rotor 2, 20 / 20mm
8
CG
8
N/A
S1 (FLA 30Ah)
12.85 / ??
S2 + S3 (FLA 60Ah)
13.12 / ??
12.87
12.63
1.64
1.23
209 / 235
63.75
1.52
0.66

57.9
1.435
1.06

Readings/COP taken at 14.93V (since previous cycle was charged to 14.93V), but then let it continue charging to 15V, so next cycle can be done to 15V again.

Rotor 2: 20magnet/20mm, gap to 6mm

Sunday
3A max
21 / 86
18.55
20
64.25

C210820
2021-08-22
Rotor 2, 20 / 20mm
6
CG
8
N/A
S1 (FLA 30Ah)
12.85 / ??
S2 + S3 (FLA 60Ah)
13.13 / ??
12.87
12.62
1.71
1.3
217 / 250
64.25
1.61
0.62

57.9
1.505
1.07

SG charge to 15V

Conclusions: Rotor 2 performs less than Rotor 3. Since in C210817 input batteries were probably discharged too long compared to their charge time (1h) for the next cycle (C210818), resulted probably for a little lower COP in C210818 compared to C210819 (also reflected in tiny difference in input voltages).

Rotor 1: 24magnet/20mm, gap to 10mm

Monday
3A max
20 / 84
9.36
10.28
52

C210821
2021-08-23
Rotor 1, 24 / 20mm
10
CG
8
N/A
S1 (FLA 30Ah)
12.85 / 13.12*
S2 + S3 (FLA 60Ah)
13.12 / 12.86*
12.85
12.62
1.81
1.42
184 / 211
52
1.40
0.71

57.9
1.615
0.87

Switched to Rotor 1: 24 magnet, 20mm wide magnets. Charged output battery to 15V. Discharge rate of output battery 1A. Ideal procedure: 1: SG charge / 2: wait 1h / 3: discharge output battery 1Ah / 4: wait hours / 5: TGX charge input batteries for 1h / 6: wait 1h / Start over.

*Measured after an hour

Conclusions: Performance Rotor 1, 10mm gap seems comparable with Rotor 3, 10mm gap, with the latter drawing a tiny lesser amp draw.