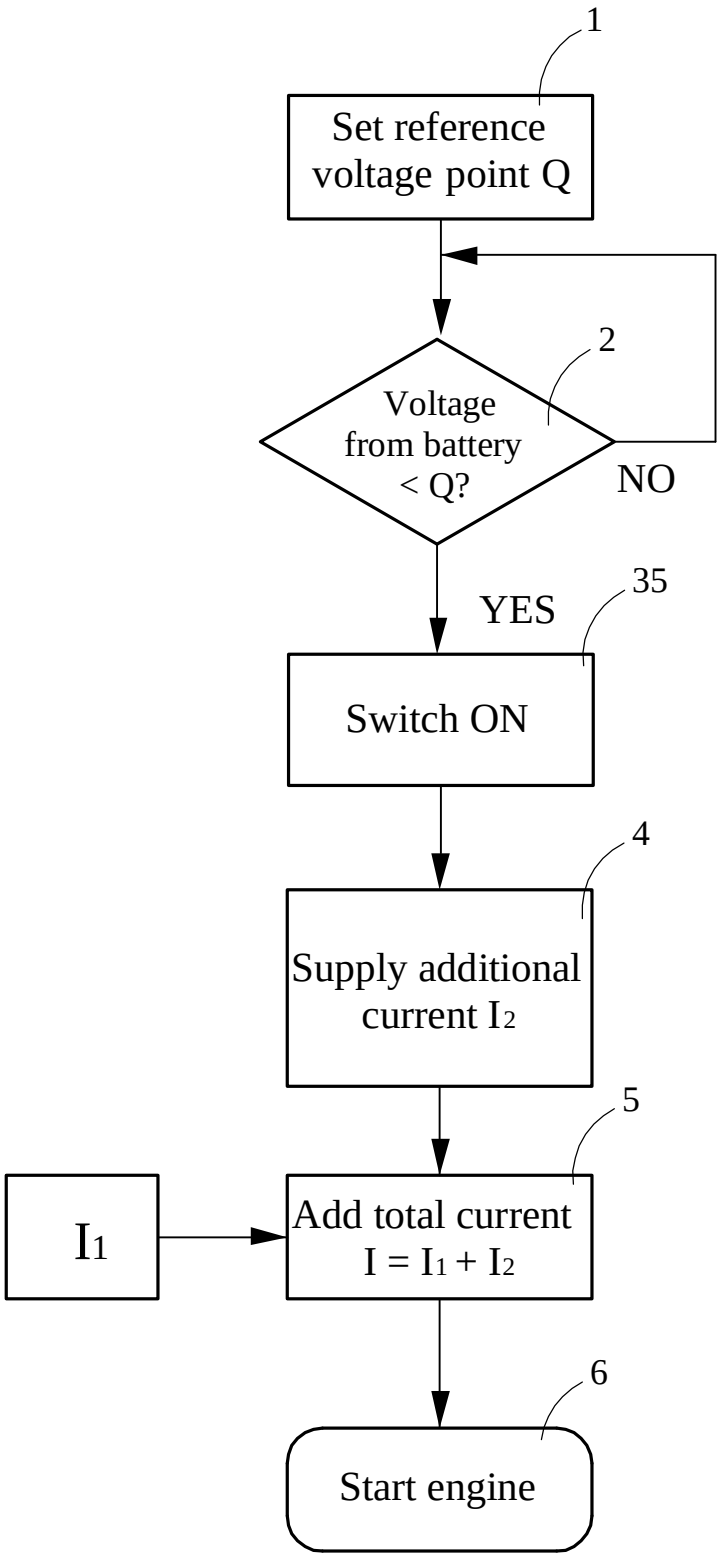

1
Set reference voltage point Q
2
Voltage from battery < Q?
NO
YES
35
Switch ON
4
Supply additional current I2
5
I1
Add total current I = I1 + I2
6
Start engine

FIG.1

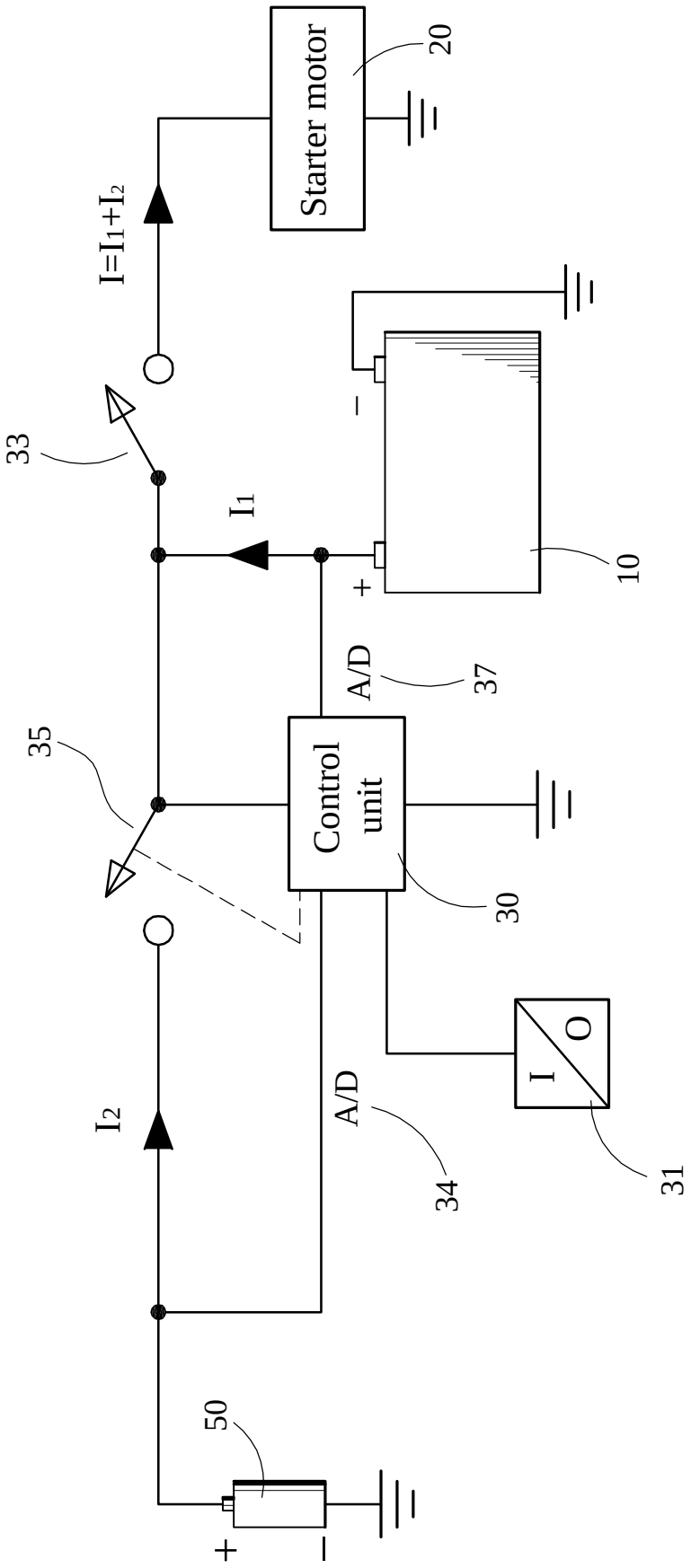

Starter motor
20
I=I1+I2
33
I1
10
A/D
37
35
Control unit
30
I2
A/D
34
I/O
31
50

FIG.2

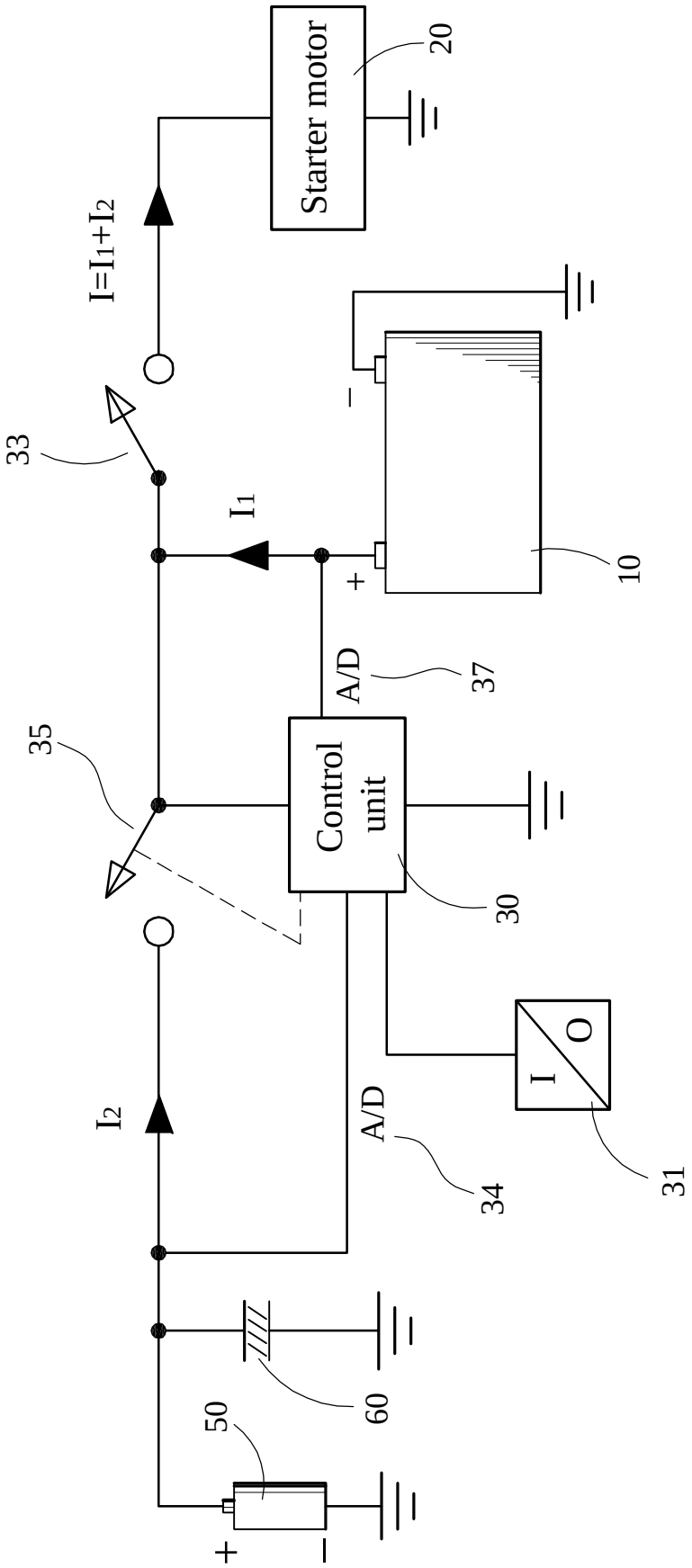

Starter motor
20
I=I1+I2
33
I1
10
A/D
37
35
Control unit
30
I2
A/D
34
I O
31
60
50
+
−

FIG.2A

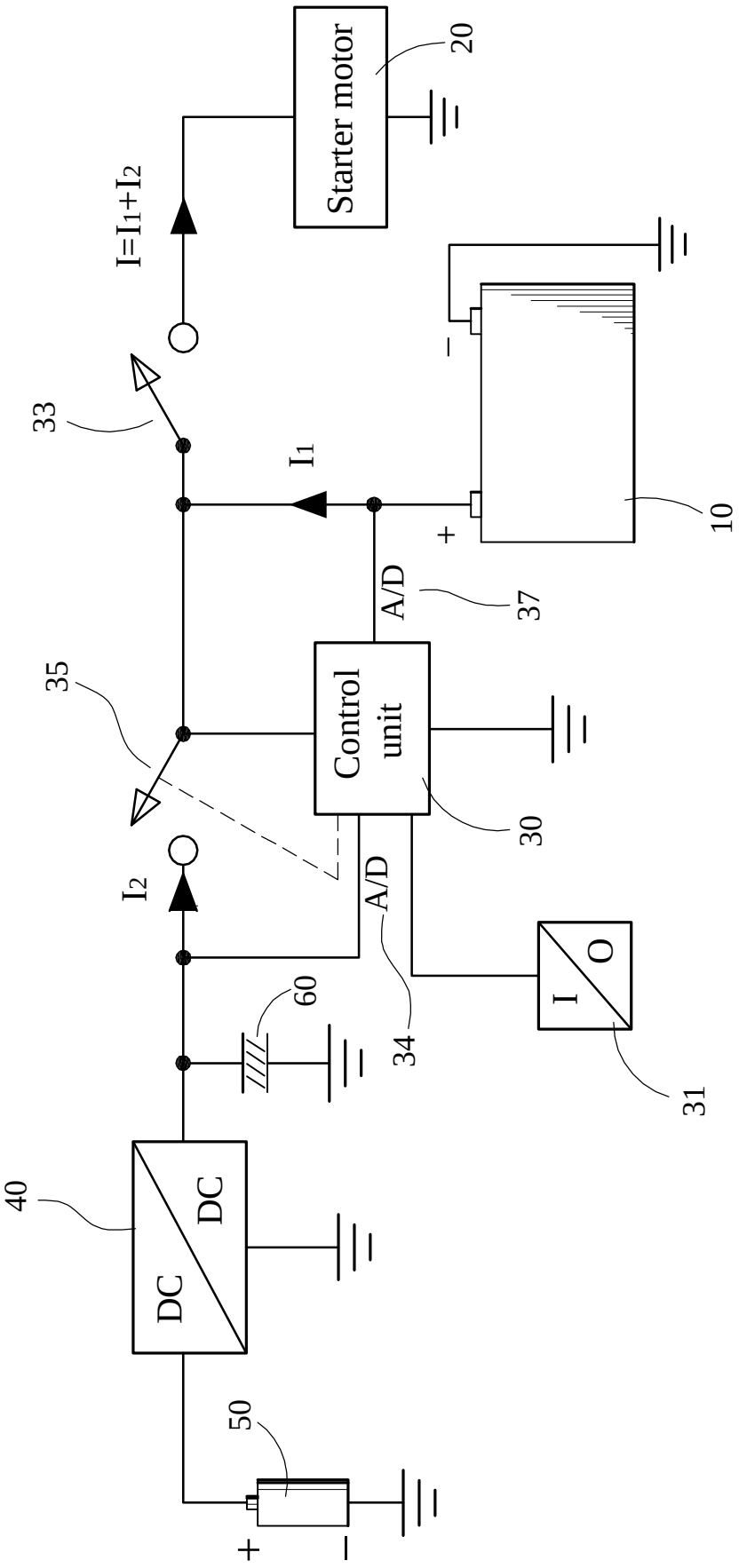

Starter motor
20
I=I1+I2
33
I1
10
A/D
37
35
Control unit
30
I2
A/D
34
60
I
O
31
40
DC
DC
50
+
−

FIG.2B

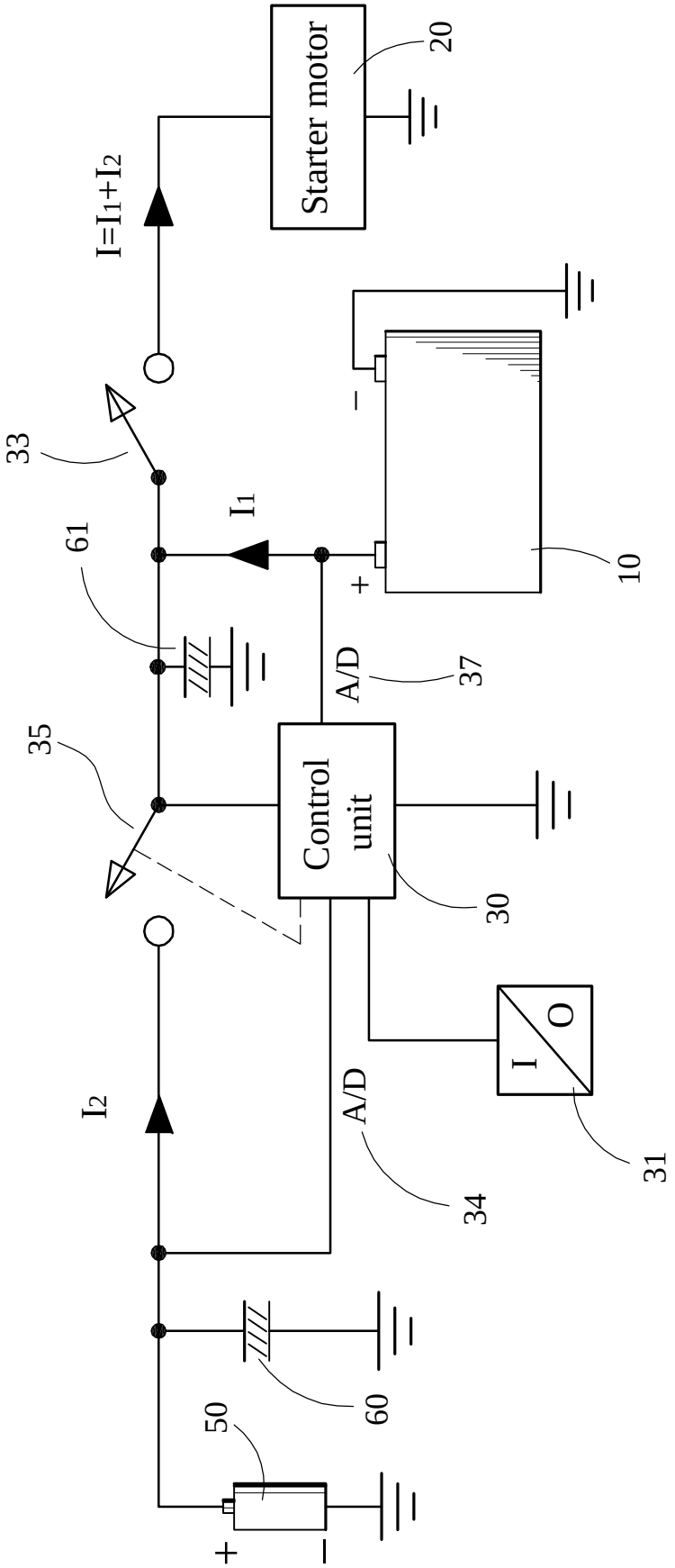

Starter motor
20
I=I1+I2
33
I1
61
10
A/D
37
35
Control unit
30
I2
A/D
34
I
O
31
60
50
+
−

FIG.2C

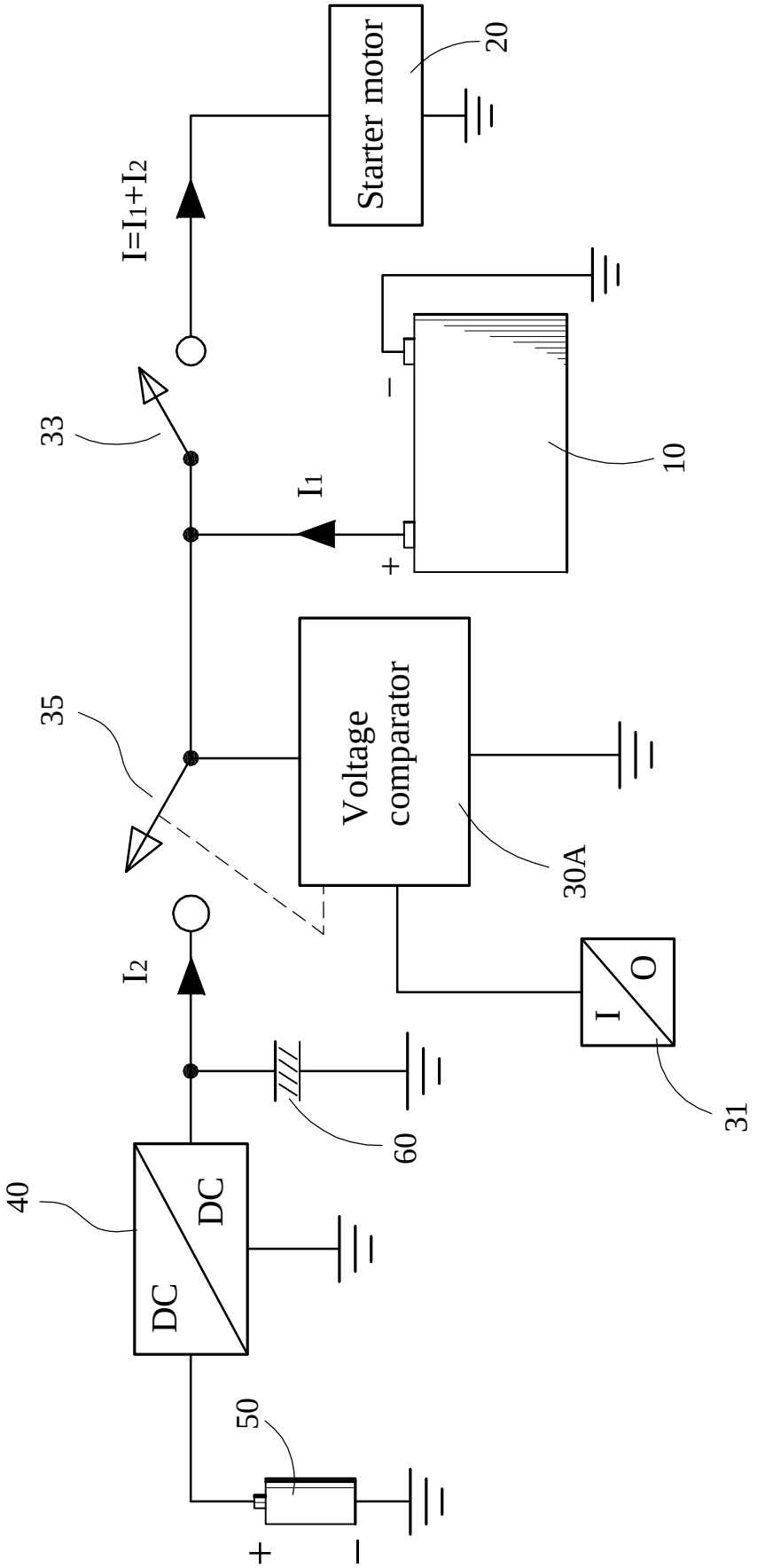

Starter motor
20
I=I1+I2
33
I1
10
35
Voltage comparator
30A
I2
I
O
31
60
40
DC
DC
50
+
-

FIG.3

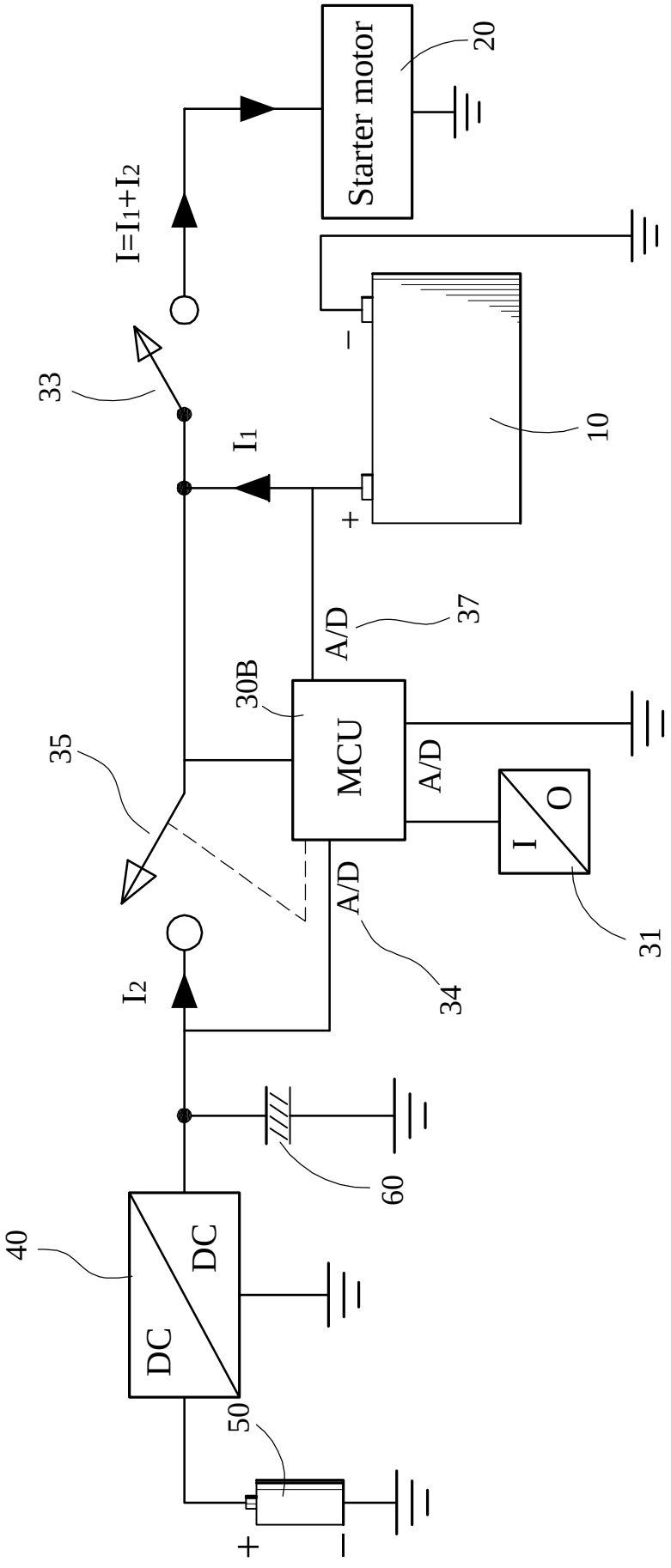

Starter motor
20
I=I1+I2
33
I1
10
A/D
37
30B
MCU
35
A/D
I
O
A/D
34
31
I2
60
40
DC
DC
50
+
−

FIG.4

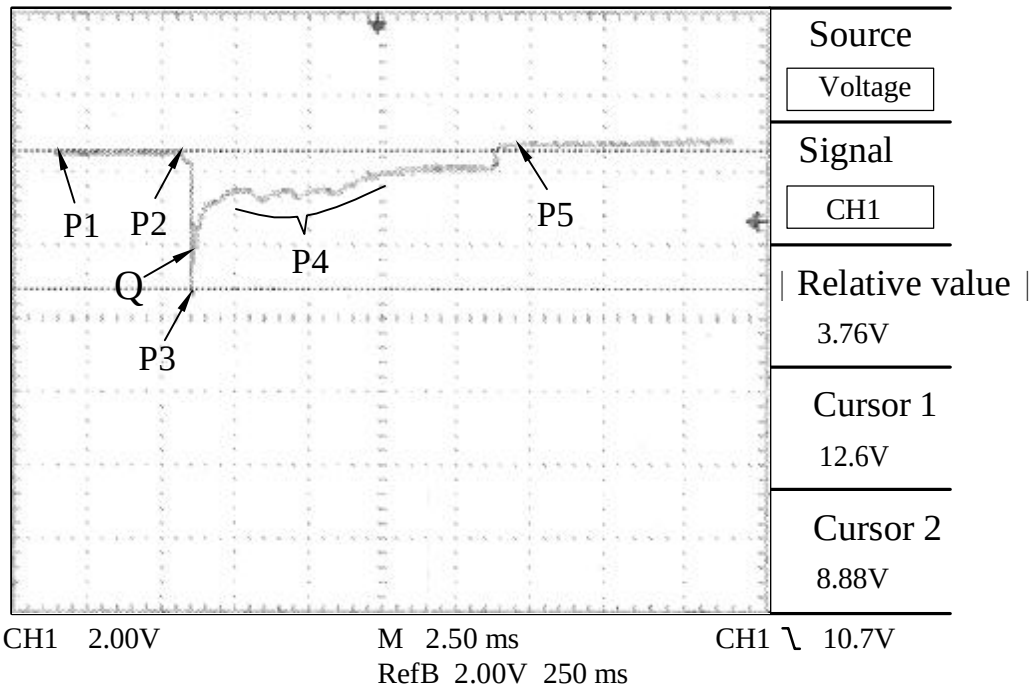

P1
P2
P3
P4
P5
Q
Source
Voltage
Signal
CH1
Relative value
3.76V
Cursor 1
12.6V
Cursor 2
8.88V
CH1 2.00V
M 2.50 ms
CH1 10.7V
RefB 2.00V 250 ms

FIG.5