



# EPAC Bicycle Test Report



Contract No. : 20010205E

Issue Date : Feb. 12, 2020

Applicant : ACT Testing Inc.

Address : 1<sup>st</sup> Floor , No. 12-1,Lane 267,Sec.3,Ming Sheng Rd.,Daya Dist.,Taichung City,42844 Taiwan

Product : Electrically power assisted cycles

Model No. : Boost Performance Step Through (1151.04052.002)

Test Standard : DS EN 15194: 2017 Cycles-Electrically power assisted cycles-EPAC Bicycles.

Test Results : Details as in test report



Note: (1) The test sample(s) is provided by the applicant and the CHC test results are shown below.

(2) This test report refer only to the test results(s) of the sample(s) tested, it does not consider measurement uncertainty. Above content follows regulations from corresponding authorities.

(3) There are total 11 pages in this report which shall not be abstracted and partially copied.

(4) There is only one test report for the applicant.

Approved by : Shi Chuan Jui

Tested by : Liu Yen-Hung





# EPAC Bicycle Test Report

Contract No: 20010205E

Sample Received Date : 2020/01/02 Tested date(s) : 2020/01/14~2020/01/17 Environmental Conditions : 23°C,41%R.H.

1. Test sample : As show in Fig. 1 to 3.
2. Test Standard :  
DS EN 15194:2017 Cycles-Electrically power assisted cycles-EPAC Bicycles
3. Test Item: As show in Table 1.

Table 1 Test item summary

| No. | Test Item                                                        | Section          |
|-----|------------------------------------------------------------------|------------------|
| 1   | General                                                          | 4.1              |
| 2   | Electric circuit(Control system malfunction)                     | 4.2.1            |
| 3   | Controls and symbols                                             | 4.2.2            |
| 4   | Battery terminals short-circuited                                | 4.2.3            |
| 5   | Motor terminals short-circuited                                  |                  |
| 6   | Battery charge                                                   |                  |
| 7   | Electric cables and connections discharging temperatures         | 4.2.5.3          |
| 8   | Wiring                                                           | 4.2.6 a), b), c) |
| 9   | wiring and its conductors flex                                   | 4.2.6 d)         |
| 10  | Power cables and conduits(electrical strength)                   | 4.2.7            |
| 11  | External and internal electrical connections                     | 4.2.8            |
| 12  | Moisture resistance                                              | 4.2.9            |
| 13  | Battery pack drops                                               | 4.2.10           |
| 14  | Battery pack impacts                                             |                  |
| 15  | Maximum assistance speed                                         | 4.2.11           |
| 16  | Start-up assistance mode                                         | 4.2.12           |
| 17  | Pedals forward and backward                                      | 4.2.13.1 a)      |
| 18  | Stops pedaling and brake lever cut off switch                    | 4.2.13.1 b), c)  |
| 19  | Assistance output                                                | 4.2.13.1 d), e)  |
| 20  | Two independent actions to start the electrical assistance mode. | 4.2.13.1 f)      |
| 21  | Electric drive malfunction                                       | 4.2.13.1 g)      |
| 22  | Maximum power measurement                                        | 4.2.14           |
| 23  | Failure mode                                                     | 4.2.16           |

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## 4. Equipments :

4.1 Electrical strength test equipment (AE-08).

4.2 Electric power assisted cycles testing machine (BE-04).

4.3 Terminals short-circuited tester(BE-06).

## 5. Test Method :

5.1 General : According to DS EN 15194 : 2017 Sec. 4.1.

5.2 Electric circuit(Control system malfunction) : According to DS EN 15194 : 2017 Sec. 4.2.1.

5.3 Controls and symbols : According to DS EN 15194 : 2017 Sec. 4.2.2.

5.4 Battery terminals short-circuited : According to DS EN 15194 : 2017 Sec. 4.2.3.

5.5 Motor terminals short-circuited : According to DS EN 15194 : 2017 Sec. 4.2.3.

5.6 Battery charge : According to DS EN 15194 : 2017 Sec. 4.2.3.

5.7 Electric cables and connections discharging temperatures : According to DS EN 15194 : 2017 Sec. 4.2.5.3.

5.8 Wiring : According to DS EN 15194 : 2017 Sec. 4.2.6 a) 、 Sec. 4.2.6 b) 、 Sec. 4.2.6 c).

5.9 wiring and its conductors flex : According to DS EN 15194 : 2017 Sec. 4.2.6 d).

5.10 Power cables and conduits(electrical strength) : According to DS EN 15194 : 2017 Sec. 4.2.7.

5.11 External and internal electrical connections : According to DS EN 15194 : 2017 Sec. 4.2.8.





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5.12 Moisture resistance : According to DS EN 15194 : 2017 Sec. 4.2.9.

5.13 Mechanical strength test (Battery pack drops) : According to DS EN  
15194 : 2017 Sec. 4.2.10.

5.14 Mechanical strength test (Battery pack impacts) : According to DS EN  
15194 : 2017 Sec. 4.2.10.

5.15 Maximum assistance speed : According to DS EN 15194 : 2017 Sec.  
4.2.11.2.

5.16 Start-up assistance mode : According to DS EN 15194 : 2017 Sec.  
4.2.12.2.2.

5.17 Pedals forward and backward : According to DS EN 15194 : 2017 Sec.  
4.2.13.2.3).

5.18 Stops pedaling and brake lever cut off switch : According to DS EN  
15194 : 2017 Sec. 4.2.13.2.3.

5.19 Assistance output : According to DS EN 15194 : 2017 Sec. 4.2.13.2.

5.20 Two independent actions to start the electrical assistance mode :  
According to DS EN 15194 : 2017 Sec. 4.2.13.1. f)

5.21 Electric drive malfunction : According to DS EN 15194 : 2017 Sec.  
4.2.13.1. g)

5.22 Maximum power measurement : According to DS EN 15194 : 2017 Sec.  
4.2.14.

5.23 Failure mode : According to DS EN 15194 : 2017 Sec. 4.2.16.





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## 6.Test Results : As show in Table 2.

Table 2 Tested summary

| No | Test Item                                                       | Section        | Test result        |
|----|-----------------------------------------------------------------|----------------|--------------------|
| 1  | General                                                         | 4.1            | N/A                |
| 2  | Electric circuit(Control system malfunction)                    | 4.2.1          | PASS               |
| 3  | Controls and symbols                                            | 4.2.2          | PASS               |
| 4  | Battery terminals short-circuited                               | 4.2.3          | PASS               |
| 5  | Motor terminals short-circuited                                 |                | N/A                |
| 6  | Battery charge                                                  |                | PASS               |
| 7  | Electric cables and connections discharging temperatures        | 4.2.5.3        | PASS               |
| 8  | Wiring                                                          | 4.2.6 a),b),c) | PASS               |
| 9  | wiring and its conductors flex                                  | 4.2.6 d)       | N/A                |
| 10 | Power cables and conduits(electrical strength)                  | 4.2.7          | FAIL               |
| 11 | External and internal electrical connections                    | 4.2.8          | N/A                |
| 12 | Moisture resistance                                             | 4.2.9          | N/A                |
| 13 | Mechanical strength test (Battery pack drops)                   | 4.2.10         | N/A                |
| 14 | Mechanical strength test (Battery pack impacts)                 | 4.2.10         | N/A                |
| 15 | Maximum assistance speed                                        | 4.2.11         | PASS<br>26.51 km/h |
| 16 | Start-up assistance mode                                        | 4.2.12         | PASS<br>5.57 km/h  |
| 17 | Pedals forward and backward                                     | 4.2.13.1 a)    | N/A                |
| 18 | Stops pedaling and brake lever cut off switch                   | 4.2.13.1 b),c) | N/A                |
| 19 | Assistance output                                               | 4.2.13.1 d),e) | N/A                |
| 20 | Two independent actions to start the electrical assistance mode | 4.2.13.1 f)    | N/A                |
| 21 | Electric drive malfunction                                      | 4.2.13.1 g)    | N/A                |
| 22 | Maximum power measurement                                       | 4.2.14         | N/A                |
| 23 | Failure mode                                                    | 4.2.16         | PASS               |

**NA: Not Applicable**財團法人  
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展社



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## 7.Appendix :



Fig. 1 Test sample(side view)



Fig. 2 Test sample(front view)





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Fig. 3 Test sample(back view)



Fig. 4 Control system malfunction and Battery terminals short-circuited test.





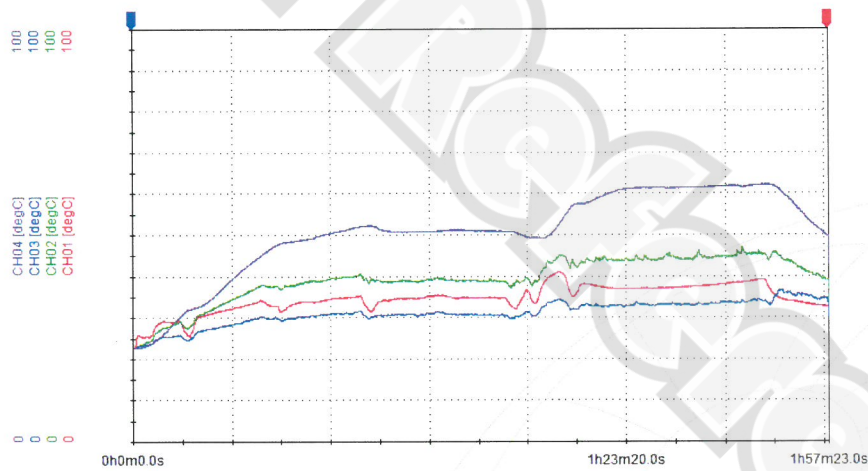
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Fig. 5-1 Electric cables and connections discharging temperatures test.



| Time     | CH01 [degC] | CH02 [degC] | CH03 [degC] | CH04 [degC] |
|----------|-------------|-------------|-------------|-------------|
| 00:00:00 | 22.7        | 22.6        | 22.6        | 22.7        |
| 1:57:23  | 39.1        | 45.8        | 34.2        | 62.1        |

Fig. 5-2 Electric cables and connections discharging temperatures test record.







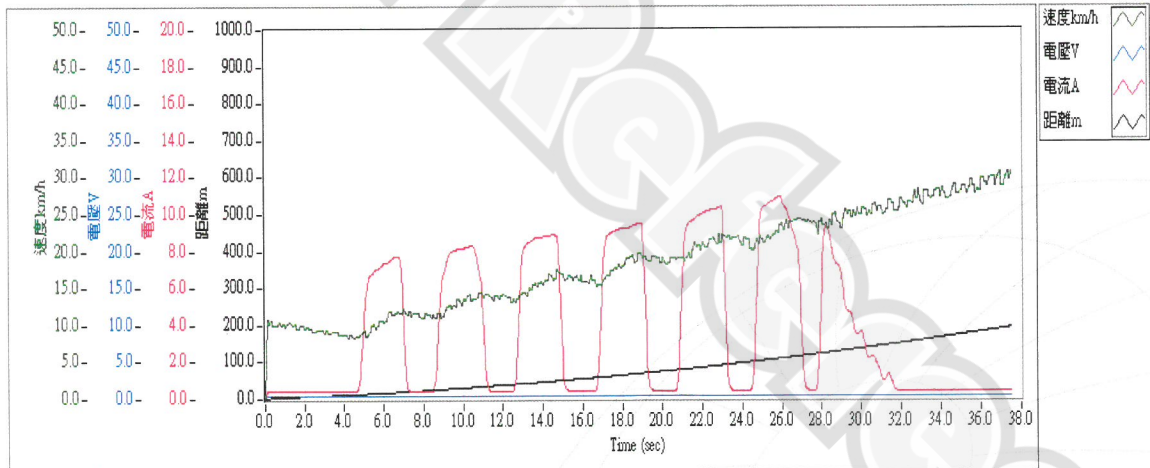
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Fig.6 Battery charge test.



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|      |            |
|------|------------|
|      | 最大輔助速度km/h |
| 輔助速度 | 26.51      |

Fig.7 Maximum assistance speed test record.





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Fig. 8-1 Motor and controller



Fig. 8-2 Motor and controller





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Fig. 9-1 Battery pack



Fig. 9-2 Battery pack

Null below

