| Revison | Change              | Approved | Date     |
|---------|---------------------|----------|----------|
| 1       | Initial release     | mie      | 15/03/16 |
| 2       | Undete to User 4 25 | mio      | 22/6/19  |
| ۷       | Opulie to User 4-25 | mje      | 22/0/10  |
|         |                     |          |          |
|         |                     |          |          |
|         |                     |          |          |



# **SUPPLEMENTARY INSTRUCTION**

# SI-006 AC200 USER SOFTWARE

## INSTRUCTIONS

| Part / Assy # | AC-2xx         |
|---------------|----------------|
| Drawing #     |                |
| Applicability | AC200User_4_25 |
| Compliance    |                |

## SUBJECT: AC200 USER SOFTWARE

#### 1. Introduction

This document is intended to assist the propeller operator in modifying the AC200 control box flight parameters. This is done through the use of software running on a MS Windows PC. A laptop computer is recommended, to allow it to be taken to the controller in the aircraft.

#### 2. Material Information

#### 2.1 Parts Required

| Item | Assy No. | Description                  |
|------|----------|------------------------------|
| 1    | A0117    | AC200 USB serial cable assy  |
| 2    |          | User Software AC200UserV4-25 |
|      |          |                              |

#### 3. **Download User Software**

Download the latest version of the User software from the Airmaster website <u>http://www.airmasterpropellers.com/a0127</u>, scroll down to Download Sample. Store to a convenient folder.



## 4. Installing USB Driver

Plug the USB cable into your windows laptop. On win10 the driver should load automatically.

Note: On other systems check the driver that has been installed under \Control Panel\ USB Serial Port

| 🔿 🖬 📓 🖬 📰 🖳 🖌 🏵   | USB Serial Port (COM4) Properties X  |
|---|--|
| AP-Design  Addic inputs and outputs  Compute  Addic inputs and outputs  Addic inputs and outputs  Compute  Disk drives  Disk drives  Addic additers  Addit Additer pointing devices  Addit Addit Additer pointing devices  Additer pointing devices  Addit Addit Additer pointing devices  Addit Ad | General Port Settings Driver Details Events<br>USB Senal Port (COM4)<br>Driver Provider: FTD1<br>Driver Date: 9/03/2016<br>Driver Version: 2.12.16.0<br>Digital Signer: Microsoft Windows Hardware Compatibility<br>Publisher<br>Driver Details View details about the installed driver files.<br>Update Driver Update the driver for this device. |
|   | Roll Back Driver         If the device fails after updating the driver, roll back to the previously installed driver.           Deable Device         Deable the device.           Heinstell Device         Listed to the previously installed driver.   |
| > 💼 System devices<br>> 🏺 Universal Serial Bus controllers  | Offiniskali Device Uninskali the device from the system (Advanced).  |

Drivers can be downloaded from the FTDI website http://www.ftdichip.com/Drivers/VCP.htm

5.

#### Connecting PC to AC200 Controller

Take the AC200 programming cable supplied, and connect PC and controller as follows:

- Connect the USB plug to a USB port on the PC. a.
- b. Connect the 4 way connector to the connector CN4 on the rear of the AC200 controller.
- Turn on the power supply to the AC200 controller by turning on the aircraft power. c.
- Run AC200 User Software on the PC. d.
- Note: You may see some windows warning you about running this software. This is normal. Select 'More Info' and 'Run Anyway'.



#### Select 'Connect' e.

After a few seconds the software will show that it is connected to the controller and the right hand panel will turn blue and display current state of the controller.

|                         | Par ne Save Par n | le Password              | Version U          | nknown         |               | Connected  | Load Par Ri      | Save Par File | Password                | Version Un           | known          | 0            |
|-------------------------|-------------------|--------------------------|--------------------|----------------|---------------|--|------------------|---------------|-------------------------|----------------------|----------------|--------------|
| t Variables             |                   | Control Settings Beta Re | mote Control N · · | Status         |               | Flight Variables                                   |                  |               | Control Settings Beta   | Remote Control N + + | Status         |              |
| Setti                   | ng Prop RPM       | Control Type             |                    | Mode           |               |  | Setting          | Prop RPM      | Control Type            | Feather              | Mode           | TAKE OFF     |
| Take Off RPM (110)      |                   |                          |                    | Set Speed      |               | Take Off RPM (110)                                 |                  |               |                         |                      | Set Speed      | 5700         |
| Climb RPM (111)         |                   | Control Value (200)      | Standard           | Actual Speed   |               | Climb RPM (111)                                    |                  |               | Control Value (200)     | Standard             | Actual Speed   | 0            |
| Cruise RPM (112)        |                   | Dead Band (201)          |                    | Error          |               | Cruise RPM (112)                                   |                  |               | Dead Band (201)         |                      | Error          | -5700        |
| Hold RPM (113)          |                   | Prop Gain (220)          |                    | Control State  |               | Hold RPM (113)                                     |                  |               | Prop Gain (220)         |                      | Control State  | IDLE         |
| lold RPM Max (120)      |                   | Differential Gain (221)  |                    | Control Output |               | Hold RPM Max (120)                                 |                  |               | Differential Gain (221) |                      | Control Output | 0            |
| Hold RPM Min (121)      |                   | Integral Gain (222)      |                    | Drive State    |               | Hold RPM Min (121)                                 |                  |               | Integral Gain (222)     |                      | Drive State    | IDLE         |
|                         |                   | Sample Tick Count (223)  |                    | Motor Current  |               |  |                  |               | Sample Tick Count (223) |                      | Motor Current  | 0            |
| Load Current Settings 1 | Nors AC200        |                          |                    | Blade angle    |               | Load Current                                       | Settings from AC | 200           |                         |                      | Blade angle    |              |
|                         | eiv Settings      |                          |                    | R              | Co Fe         | Update AC20  | 0 with New Set   | nga           |                         |                      | R              | Co Fe        |
|                         |                   |                          |                    | Drive 🗆        |               |  |                  |               |                         |                      | Drive 🗆        |              |
| irmaste                 | er 🥏              |                          |                    | Stop 🗆         |               | Airma  | ster             |               |                         |                      | Stop 🗆         |              |
| gnostics                |                   | 6                        | RPM Test           |                |               | Diagnostics  |                  |               |                         | RPM Test             |                |              |
|                         |                   | ^                        | Set signal         | Monitor        | Start Logging | Trying serial port COM3<br>Trying serial port COM4 | -                |               | -                       | Set signal           | Monitor        | Start Loggin |

#### **Press Connect**

**Controller connected** 

Don't run

Note: If the software shows that it is not connected, check that the comport selection displayed at the bottom of the software window is the same as that used by the cable. If this does not work, check that no other software on the PC has taken control of the com port. Contact Airmaster Propellers Ltd if further trouble is experienced.

#### 6. Checking Parameter Values

Click the 'Load Current Settings From AC200' button on PC. The parameter values currently programmed in the controller will appear in the setting windows.

| Connected                                    | Load Par File     | Save Par File | Passv   | word        | 1                        |            | AC200 V4.        | 4.42      |       |         | ۲       |
|--|-------------------|---------------|---------|-------------|--------------------------|------------|------------------|-----------|-------|---------|---------|
| ht Variables                                 |                   |               | Control | Settings    | Beta                     | Remote Cor | ntrol N · ·      | Status    |       |         |         |
|  | Setting           | Prop RPM      |         |             |                          |            |                  | ,         | Aode  | TAKE O  | FF      |
| Take Off RPM (110)                           | 5700              | 2345          |         | Cor         | ntrol Type               | Feather    |                  | Set S     | peed  | 5700    |         |
| Climb RPM (111)                              | 5500              | 2263          | 1       | Control Va  | alue (200)               | 30 (n      | om/tick]         | Actual S  | peed  | 0       |         |
| Cruise RPM (112)                             | 5000              | 2057          |         | Dead B      | and (201)                | 60         |                  |           | Error | -5700   |         |
| Hold RPM (113)                               | 4000              | 1646          |         | Prop G      | ain (22 <mark>0</mark> ) | 400        |                  | Control   | State | IDLE    |         |
| Hold RPM Max (120)                           | 5700              | 2345          | Dif     | ferential C | Gain (221)               | 2000       |                  | Control O | utput | 0       |         |
| Hold RPM Min (121)                           | 4000              | 1646          |         | Integral G  | aain (222)               | 50         |                  | Drive     | State | IDLE    |         |
|  |                   |               | Sampl   | le Tick Co  | ount (223)               | 5          |                  | Motor Cu  | rent  | 0       |         |
| Load Current S                               | ettings from AC2  | 00            |         |             |                          |            |                  | Blade a   | angle |         |         |
| Update AC200                                 | ) with New Settin | gs            | -       |             |                          |            |                  |           | Fi    | Co      | Fe      |
|  |                   |               |         |             |                          |            |                  | Drive     |       |         |         |
| lirma  | ster              |               |         |             |                          |            |                  | Stop      |       |         |         |
| agnostics                                    |                   |               |         |             |                          | RPM        | Test             |           |       |         |         |
| ing serial port COM3<br>ing serial port COM4 |                   |               |         |             | ^                        | Sign       | ai<br>Set signal | Monit     | or    | Start L | .ogging |

Load parameter file

All of the parameter values may be checked against the values recorded on the "AC200 Software and Parameter" sheet that came with the propeller. By referencing the parameter numbers, the programmed parameter values can be compared with the correct parameter values recorded on the sheet.

Software version can be checked in the top right of the display window

Many parameters are listed under the tabbed window. You may need to navigate to them using the < and > nav boxes on the upper right

| Connected   | Load Par File    | Save Par File | Passwo   | ord bro               |           |                          | AC200 V4.4 | A2 🥌     | -        | _       | 0      |  |
|---|------------------|---------------|----------|-----------------------|-----------|--------------------------|------------|----------|----------|---------|--------|--|
| ght Variables   |                  |               | Settings | Beta Remo             | e Control | Misc                     | C. • •     | Status   |          |         |        |  |
|   | Setting          | Prop RPM      |          |                       |           |                          |            |          | Mode     | TAKE C  | FF     |  |
| Take Off RPM (110)  | 5700             | 2345          | C        | ontrol Word (00       | 0)        |                          |            | Set 5    | ipeed    | 5700    |        |  |
| Climb RPM (111)   | 5400             | 2222          | Unfe     | Unfeather Timer (002) |           | Unfeather Timer (002) 30 |            |          | Actual S | ipeed   | 0      |  |
| Cruise RPM (112)  | 5000             | 2057          | R        | PM Scaling (01        | 0) 2/     | 13                       |            |          | Error    | -5700   |        |  |
| Hold RPM (113)  | 5000             | 2057          |          | RPM Filter (01        | 1) 8      | 0                        |            | Control  | Qala     | IDLE    |        |  |
| Hold RPM Max (120)  | 5700             | 2345          | Drive    | PWM Max (03           | 0) 2!     | 54                       |            | Control  | and a    | 0       |        |  |
| Hold RPM Min (121)  | 21) 4000 1646    |               | Drive    | 1) 11                 | 80        |                          | Deve       | Outo     | IDIF     | =       |        |  |
|   |                  |               | Start F  | Pulse mSec (03        | 2) (      | )                        |            | Motor Ci | ment     | 0       |        |  |
| Load Current S  | ettings from AC2 | 00            | c        | Current Limit (04     | 0) 25     | 00                       |            | Blade    | angle    | -       |        |  |
| Update AC200  | with New Setting | 25            | Max C    | ontrol RPM (10        | 0) 80     | 00                       |            |          |          | -       | -      |  |
|   |                  |               | Min C    | ontrol RPM (10        | 1) 20     | 00                       |            | Drives   |          |         | Fe     |  |
| Airmas  | ster             |               | RP       | M Warning (10         | 2) 11     | 10                       |            | Stop     |          |         |        |  |
| liagnostics   |                  |               |          |                       |           | RPM                      | Test       |          |          |         |        |  |
| ing serial port COM3<br>ing serial port COM4<br>recorded CK |                  |               | ~        |                       |           | Signal                   | t signal   | Mon      | tor      | Start L | ogging |  |

**Reading SW version** 



Using tabbed interface

#### 7. Changing Flight Parameter Values

The flight variables (parameters 110 to 121) are available to be changed by the operator. These values are recorded in the leading particulars section of the propeller logbook, as well as on the "AC200 Software and Parameter" sheet. The values recommended by Airmaster are listed in chapter 9 of the "Operators Manual", which came with the propeller.

Note: The other parameters; setting variables and control variables, are not available to be changed by the operator. These parameters are protected by a password in the operator program software. Contact Airmaster Propellers Ltd for further advice should these parameters require changing.

If the operator wishes to alter the operation of the controller, the flight variables may be changed as follows:

- a. Enter new values in the setting windows beside each parameter. Ensure that the following conditions are met:
  - i. That 'Take-Off RPM' and 'Hold RPM Max' are both at least 100rpm less than the maximum speed for the engine concerned (eg 5700rpm or less for Rotax engines).
  - ii. That the calculated propeller speed (Prop RPM) 'Take-Off RPM' and at 'Hold RPM Max' (see values in Prop RPM column) are within allowable ratings for the Airmaster hub being used.
- Note: Current versions of the controller software apply other checks to the parameters programmed in the controller. For instance, the controller will not allow a value for 'Hold RPM Max' to be higher than 'Take-Off RPM'.
  - b. Click 'Update AC200 with New Settings' button. The new values for the parameters will be loaded into the controller.

| -  |                    |               |                         |                      |                |      | u ,,      | Har Heres over Hogis   | in the street      | a of April 2010 |                         |                      |                |         | <b>*</b> |
|--|--------------------|---------------|-------------------------|----------------------|----------------|------|-----------|--|--------------------|-----------------|-------------------------|----------------------|----------------|---------|----------|
| Connected  | Load Par File      | Save Par File | Password                | AC200 V4.            | 4.42           |      | ۲         | Connected  | Load Par File      | Save Par File   | Password                | AC200 V4.            | 4.42           |         | ۲        |
| light Variables  |                    |               | Control Settings Beta   | Remote Control N · · | Status         |      |           | Flight Variables   |                    |                 | Control Settings Beta   | Remote Control N · · | Status         |         |          |
|  | Setting            | Prop RPM      | Control Tune            | Eesther              | Mode           | TAKE | OFF       |  | Setting            | Prop RPM        | Control Type            | Feather              | Mode           | TAKE C  | DFF      |
| Take Off RPM (110)   | 5700               | 2345          | control type            | reatives             | Set Speed      | 5700 |           | Take Off RPM (110)   | 5700               | 2345            | control type            |                      | Set Speed      | 5700    |          |
| Climb RPM (111)  | 5500               | 2263          | Control Value (200)     | 30 [rpm/tick]        | Actual Speed   | 0    |           | Climb RPM (111)  | 5500               | 2263            | Control Value (200)     | 30 [rpm/tick]        | Actual Speed   | 0       |          |
| Cruise RPM (112)   | 5000               | 2057          | Dead Band (201)         | 60                   | Error          | -570 | D         | Cruise RPM (112)   | 5000               | 2057            | Dead Band (201)         | 60                   | Error          | -5700   |          |
| Hold RPM (113)   | 4800               | 1975          | Prop Gain (220)         | 400                  | Control State  | IDLE |           | Hold RPM (113)   | 4900               | 2016            | Prop Gain (220)         | 400                  | Control State  | IDLE    |          |
| Hold RPM + +++.J)  | 5700               | 2345          | Differential Gain (221) | 2000                 | Control Output | 0    |           | Hold RPM Max (120)   | 5700               | 2345            | Differential Gain (221) | 2000                 | Control Output | 0       |          |
| Hold RPM Min (121)   | 4000               | 1646          | Integral Gain (222)     | 50                   | Drive State    | IDLE |           | Hold RPM Min (121)   | 4000               | 1646            | Integral Gain (222)     | 50                   | Drive State    | IDLE    |          |
|  |                    |               | Sample Tick Count (223) | 5                    | Motor Current  | 0    |           |  |                    |                 | Sample Tick Count (223) | 5                    | Motor Current  | 0       |          |
| Load Current S   | Settings from AC2  | 00            |                         |                      | Blade angle    |      |           | Load Current 1   | Settinga from AC2  | 10.7            |                         |                      | Blade angle    |         |          |
| Update AC200   | ) with New Setting | gs 💦          |                         |                      | R              | Co   | Fe        | Update AC20  | 0 with New Setting | 8               |                         |                      | R              | Co      | Fe       |
|  |                    |               |                         |                      | Drive 🔲        |      |           |  |                    |                 |                         |                      | Drive 🔲        |         |          |
| Airma  | ster               |               |                         |                      | Stop 🗆         |      |           | Airma  | ster               |                 |                         |                      | Stop 🗆         |         |          |
| lagnostics   |                    |               |                         | RPM Test             |                |      |           | Diagnostics  |                    |                 |                         | RPM Test             |                |         |          |
| Trying serial port COM3<br>Trying serial port COM4<br>Connected OK |                    |               | ^                       | Signal<br>Set signal | Monitor        | Star | t Logging | Trying serial port COM3<br>Trying serial port COM4<br>Connected OK |                    |                 | ~                       | Signal<br>Set signal | Monitor        | Start I | Logging  |



**Parameters Updating** 

- c. Record the new flight variable parameter values in a new column in the following locations:
  - i. The "AC200 Software and Parameter" sheet.

- ii. The leading particulars section of the propeller logbook.
- d. Make an entry in the propeller logbook to record the action carried out.
- Note: The parameter values actually programmed in the controller may be checked at any time by clicking the 'Load Current Settings From AC200' button. This function resets any values entered into the setting windows to the values currently programmed into the controller.

When the operator is satisfied that the desired parameters are programmed into the controller, the reprogramming should be completed by closing the software on the PC, turning off the power supply to the controller, and disconnecting the cable from the controller.

8.

## Changing System Parameter Values

**Caution:** System parameters should only be changed with consultation, and with approval from Airmaster Propellers Ltd. Failure to adhere to this may make the controller inoperative or to react in unpredictable ways.

Enter the password into the password box. The system parameter boxes will now appear white

| Connected  | Load Par File                               | Save Par File  | Paseword   | A                             | C200 V4.5.  | 92  |   |         |        |
|--|---|--|--|-------------------------------|---|---|---|---------|--------|
| Loop of an in         Loop of an in         Loop of an in           Setting         Poop FPM           Take OH FIPM (110)         5700         2345           Claire RFM (111)         5500         2657           Hald RPM Min (120)         5700         2455           Hald RPM Min (120)         5700         1465           Lood Currett Settings from AC200         1465 |   | Control Settings Beta<br>Control Settings Beta<br>Control Value (200)<br>Dead Band (201)<br>Prop Gain (220)<br>Differential Gain (221)<br>Heterol Gain (222) | Remote Control           Beta           0         Standar           60           400           2000           50 | N K K                         | Status<br>Set S<br>Actual S<br>Control :<br>Control 0 | Node<br>peed<br>Error<br>State<br>utput         | TAKE OFF<br>5700<br>0<br>-5700<br>IDLE<br>0<br>IDLE |         |        |
| Load Current S<br>Update AC200<br>Airmas   | ettings from AC2<br>with New Settin<br>Ster |  | Sample Tick Count (223)  | 5                             |   | Drive :<br>Motor Cu<br>Blade a<br>Drive<br>Stop | state<br>rent<br>rngle<br>R<br>D                    | 0<br>Co | Fe     |
| Diagnostics<br>Trying serial port COM3<br>Trying serial port COM4<br>Connected OK  |   |  | ^<br>v   | RPM Test<br>Signal<br>Set sig | gnal  | Mont  | or  | Start L | ogging |

**Enter password** 

Change the parameter by typing the new value in the parameter box

| Connected  | Load Par File    | Save Par File | Paseword      |                |              | AC200 V4.5 | .42       |       |         | (0)    |
|--|------------------|---------------|---------------|----------------|--------------|------------|-----------|-------|---------|--------|
| ight Variables                                     |                  |               | Control Setti | ngs Beta       | Remote Contr | ol N · ·   | Status    |       |         |        |
|  | Setting          | Prop RPM      | May Care      | DDM (400)      | [ 2200]      | 1          | 1         | Mode  | TAKE O  | FF     |
| Take Off RPM (110)                                 | 5700             | 2345          | Max Enga      | 20 PSP M (400) | 2200         |            | Set S     | peed  | 5700    |        |
| Climb RPM (111)                                    | 5500             | 2263          | Che           | sk RPM (401)   | 1            |            | Actual S  | peed  | 0       |        |
| Cruise RPM (112)                                   | 5000             | 2057          | Check Roa     | Switch (402)   | 0            |            |           | Error | -5700   |        |
| Hold RPM (113)                                     | 5000             | 2057          | Max R         | in RPM (403)   | 3500         | 1          | Control   | State | IDLE    |        |
| Hold RPM Max (120)                                 | 5700             | 2345          |               |                |              |            | Control O | utput | 0       | =      |
| Hold RPM Min (121)                                 | 4000             | 1646          |               |                |              |            | Dive      | State | IDLE    | Ξ      |
|  |                  |               |               |                |              |            | Motor Cu  | rent  | 0       |        |
| Load Current S                                     | ettings from AC2 | 00            |               |                |              |            | Blade     | ingle |         | =      |
| Update AC200                                       | with New Settin  | gs :          |               |                |              |            |           | R     | Co      | Fe     |
|  |                  |               |               |                |              |            | Drive     |       |         |        |
| Airmas   | ster             |               |               |                |              |            | Stop      |       |         |        |
| Diagnostics  |                  |               |               |                | RPM 1        | eat        |           |       |         |        |
| Trying serial port COM3<br>Trying serial port COM4 |                  |               |               |                | Signal       | t signal   | Moni      | tor   | Start L | ogging |

Change parameter value

Check the parameter has loaded correctly after repowering the controller

| Connected  | Load Par Fie     | Save Par File | Passed    | ed [*** |           |           | AC200 \          | 4.5.42  |        |         |       |
|--|------------------|---------------|-----------|---------|-----------|-----------|------------------|---------|--------|---------|-------|
| light Variables  |                  |               | Control S | ettings | Deta      | Remote Co | ntsol & •        | Status  |        | _       |       |
|  | Setting          | Prop RPM      | Max Fe    | cace R  | PM (400)  | 2200      | 1                |         | Mode   | TAKE C  | IFF   |
| Take Off RPM (110)   | 5700             | 2345          |           |         |           |           | =                | Set     | Speed  | 5700    |       |
| Climb RPM (111)  | 5500             | 2263          | c         | heck h  | PM (401)  |           | -                | Actual  | Speed  | D       |       |
| Cruise RPM (112)   | 5000             | 2057          | Check P   | loat Sw | 6ch (402) | 0         |                  |         | Errer  | -5700   |       |
| Hold RPM (113)   | 5000             | 2057          | Max       | Run R   | PM (403)  | 3500      |                  | Contro  | State  | IDLE    |       |
| Hold RPM Max (120)   | 5700             | 2345          |           |         |           |           |                  | Control | Output | 0       |       |
| Hold RPM Min (121)   | 4000             | 1646          |           |         |           |           |                  | Drive   | State  | IDLE    |       |
|  |                  |               |           |         |           |           |                  | Motor C | unert  | 0       |       |
| Load Current S   | ettings from AC. | 200           |           |         |           |           |                  | Bade    | angle  |         |       |
| Update AC200   | with New Setti   | nga           |           |         |           |           |                  |         | R      | Co      | Fe    |
|  | _                |               |           |         |           |           |                  | Drive   |        |         |       |
| Airmas   | ster             |               |           |         |           |           |                  | Stop    |        |         |       |
| Diagnostics  |                  |               |           |         |           | RPI       | Test             |         |        |         |       |
| Connected OK<br>Trying serial port COM3<br>Trying serial port COM4<br>Connected OK |                  |               |           |         | ^         | Son       | ai<br>Set signal | Mar     | ntor   | Start L | agang |

**Check parameters** 

Navigate to desired parameter using tabbed interface

| Connected   | Load Par File  | Save Par File   | Paseword  | *******   |                  | AC200 V4.5   | .42   |   |  |        |
|---|--|---|---|---|------------------|--------------|---|---|--|--------|
| Iget Vanables<br>Take Off RPM (110)<br>Cinib RPM (111)<br>Culies RPM (112)<br>Hold RPM (112)<br>Hold RPM (112)<br>Hold RPM (112)<br>Load Cunert S<br>Update AC200 | Setting           \$700           \$500           \$4000 <t< th=""><th>Prop. RPM<br/>2345<br/>2263<br/>2057<br/>2345<br/>1646<br/>200<br/>209<br/>209<br/>209<br/>209<br/>209<br/>209<br/>209<br/>209<br/>209</th><th>Control Sett<br/>Max Enga<br/>Ohe<br/>Check Roz<br/>Max R</th><th>ings Beta<br/>ge RPM (400)<br/>ck RPM (401)<br/>at Switch (402)<br/>Lun RPM (403)</th><th>Remote Control</th><th>þ</th><th>Status I<br/>Set S<br/>Actual S<br/>Control O<br/>Drive<br/>Mator Cu<br/>Blade o<br/>Drive<br/>Stop</th><th>Node<br/>beed<br/>Enor<br/>State<br/>tout<br/>State<br/>rent<br/>Rate<br/>R<br/>R<br/>C</th><th>TAKE 0<br/>5700<br/>5700<br/>5700<br/>1DLE<br/>0<br/>1DLE<br/>0<br/>0<br/>0</th><th>Fe</th></t<> | Prop. RPM<br>2345<br>2263<br>2057<br>2345<br>1646<br>200<br>209<br>209<br>209<br>209<br>209<br>209<br>209<br>209<br>209 | Control Sett<br>Max Enga<br>Ohe<br>Check Roz<br>Max R | ings Beta<br>ge RPM (400)<br>ck RPM (401)<br>at Switch (402)<br>Lun RPM (403) | Remote Control   | þ            | Status I<br>Set S<br>Actual S<br>Control O<br>Drive<br>Mator Cu<br>Blade o<br>Drive<br>Stop | Node<br>beed<br>Enor<br>State<br>tout<br>State<br>rent<br>Rate<br>R<br>R<br>C | TAKE 0<br>5700<br>5700<br>5700<br>1DLE<br>0<br>1DLE<br>0<br>0<br>0 | Fe     |
| Diagnostics<br>Trying serial port COM3<br>Trying serial port COM4<br>Connected OK   |  |   |   | ^   | RPM Te<br>Signal | st<br>signal | Mont  | or  | Start L  | ogging |

**Find parameter** 

Update AC200 with new value



Update AC200

Update parameter sheet with new parameter value

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Update parameter sheet

#### 9. Saving Parameter Files

Select 'Save Par File', then choose a file name and path to store the file.

| Convention         Land Torre Torre         Account Value AL           Vpt Andrew         Convent Value AL         Torre         Torre<   | AC200 User Progra                 | m V4.2.5 Relie   | used 04 April 2018 |                         |                  |                  | O X      |
|---|-----------------------------------|------------------|--------------------|-------------------------|------------------|------------------|----------|
| Value         Series         Normality         Norma  | Connected                         | Land Der Die     | Course Day Day     | 1 Press                 |                  |                  |          |
| Serge         No   | v Variables                       | Loso Far Pa      | L'ane ra ne        | Control Settings Beta   | Remote Control N | s Status         |          |
| Tack of Wein (110)         Work         Call Server         Work         Call Server         Work           Call Server (110)         Work         Call Server (110)         Work         Call Server (110)         Call Server (11   |                                   | Setting          | Prop RPM           | C                       |                  | Mode             | TAKE OFF |
| Out # RMI (11)       900       2021       Out # RMI (2010)       90       Point Sile (2010)       80         Austral Status       900       2021       000       Bit Sile (2010)       000       000         Hast RMI (12)       900       2020       Different Gauc (2011)       000       000       000       000         Hast RMI (12)       900       2020       Different Gau (2011)       000       <   | Take Off RPM (110)                | 5700             | 2345               | Control Type            | Feather          | Set Speed        | 5700     |
| Concersion         Description  | Climb RPM (111)                   | 5500             | 2263               | Control Value (200)     | 30 [pm/lick]     | Actual Speed     | 0        |
| Num (Her 133         000         111         000 <t< td=""><td>Cruse RPM (112)</td><td>5000</td><td>2057</td><td>Dead Band (201)</td><td>60</td><td>Enor</td><td>-5700</td></t<>  | Cruse RPM (112)                   | 5000             | 2057               | Dead Band (201)         | 60               | Enor             | -5700    |
| Hase RPM Nax (120)     1300     1345       Heir RPM Nax (120)     1300     1300       Heir RPM Nax (120)     1300     1300       Service Service Nax     1300       Updare XC20 and This Service     1300       Water Service Nax     1000       Water Service Nax     1000 <td>Hold RPM (113)</td> <td>4900</td> <td>2016</td> <td>Prop Gain (220)</td> <td>400</td> <td>Control State</td> <td>IDLE</td>  | Hold RPM (113)                    | 4900             | 2016               | Prop Gain (220)         | 400              | Control State    | IDLE     |
| Heter PM Ms (12)         Huge d'an (22)         10         Dere Bale         ME         100-000           Lad Cavet Serray from X.200         Service Total Cave (22)         Dere Bale         Mac Cavet         100-000         100-000           Lad Cavet Serray from X.200         Service Total Cave (22)         Dere Bale         Mac Cavet         100-000         100-000           Lad Cavet Serray from X.200         Bale angle         Dere Bale         000         100-000         100-000           Lad Cavet Serray from X.200         Dere Bale         Dere Bale         Dere Bale         100-000         100-000           Lad Cavet Serray from X.200         Dere Bale         Dere Bale         Dere Bale         100-000         100-000           Lad Cavet Serray from X.200         Dere Bale         Dere Bale         Dere Bale         100-000         100-000           Lad Cavet Serray from X.200         Dere Bale         Dere Bale         200-000         200-000         200-000           Cabcords Bin fabrue         Total         Dere First Serray         Dere Total         200-000   | kild RPM Max (120)                | 5700             | 2345               | Differential Gain (221) | 2000             | Control Output   | 0        |
| Load Careet Sampa from X200         Service Trac Care (202)         Bende market  | Hold RPM Min (121)                | 4000             | 1646               | Integral Gain (222)     | 50               | Drive State      | IDLE     |
| Last Curve Storage from K2000     Bask angle     2014-0       tybes K2200 with the Storage     B     101-0       tybes K2200 with the Storage     B     101-0       tybes K2200 with the Storage     B     101-0       tybes K2200 with the Storage     P     101-0       tybes K2200 with the Storage     P     228-400       Choose Sile flatment     Finance     228-400       Choose Sile flatment     Finance     228-400       Choose Sile flatment     Finance     228-400   |                                   |                  |                    | Sample Tick Court (223) | 5                | Motor Current    | 0        |
| type         E         Ca         P </td <td>Load Current S</td> <td>Settings from AC</td> <td>200</td> <td></td> <td></td> <td>Elade angle</td> <td></td>  | Load Current S                    | Settings from AC | 200                |                         |                  | Elade angle      |          |
| With Store As         211-400           Airmast         >         >         >         212-400           Choose Size name         >         >         >         >         221-600           Choose Size name         Fina and            221-600           Choose Size name         Fina and            221-600  | Update AC20                       | 0 with New Set   | ings               |                         |                  | B                | Co Fe    |
| A//mast. → → → ■ . The #C > Deatep > ↓ 0   Search Deatep /P 221-000<br>Choose Sile name Far ware [ 221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221-00<br>221- |                                   | 🖷 s              | ave As             |                         |                  |                  | ×        |
| Choose Sie name Fixes March 199 2224<br>44-100 440-100  | Irma                              | st               | 🕈 🗖                | This PC > Desktop >     | ¥                | 5 Search Desktop | Q.       |
| For stars from Fire (I and  |                                   |                  | File name:         | 1                       |                  |                  | Ŷ        |
| Add te day of da  | ng setal port COM3                | ~                | Save as type:      | Param Files (*.par)     |                  |                  | ~        |
| ying bend por Curve<br>manedad OK V Bityune Folders Save Cancel 403-1000  | ing senai port COMM<br>inected OK | ~ 6              | Irowse Folders     |                         |                  | Save             | Cancel   |
|   |                                   |                  |                    |                         | -                |                  |          |

The resultant file is a text based with an extension of .par

You can view the contents of the file with a text editor like 'Notepad'

## 10. Loading Parameter files

Select 'Load Par File' then navigate to, and select the desired parameter file. Press 'Open'.



Save the parameter file to the AC200 by selecting 'Update AC200 with New Settings'

| Connected  | Load Par Fie                 | Save Par File | Password             |                              | -             | AC200 \    | 4.4.42   |                |        |    |  |
|--|------------------------------|---------------|----------------------|------------------------------|---------------|------------|----------|----------------|--------|----|--|
| ight Variables   |                              |               | Control Set          | ings Beta                    | Remote Co     | entrol N • | • Status |                |        |    |  |
|  | Setting                      | Prop RPM      |                      | C                            |               |            |          | Mode           | TAKE O | FF |  |
| Take Off RPM (110)   | 5700                         | 2345          |                      | Control Type                 | Feather       |            | Set      | Speed          | 5700   |    |  |
| Climb RPM (111)  | 5400                         | 2222          | Cont                 | rol Value (200)              | 100 8         | pm/tick]   | Actual   | Speed          | 0      |    |  |
| Cruise RPM (112)   | 5000                         | 2057          | De                   | ad Band (201)                | 60            |            |          | Error          | -5700  |    |  |
| Hold RPM (113)   | 5000                         | 2057          | F                    | top Gain (220)               | 400           |            | Contro   | State          | IDLE   |    |  |
| Hold RPM Max (120)   | loid RPM Max (120) 5700 2345 |               |                      | Differential Gain (221) 2000 |               |            |          | Control Output |        | 0  |  |
| Hold RPM Min (121)   | 4000 1646                    |               | Inte                 | gral Gain (222)              | 50            |            | Dtw      | State          | IDLE   |    |  |
|  | Sample Tick Count (223) 5    |               |                      | Motor C                      | Motor Current |            |          |                |        |    |  |
| Load Current S   | ettings from AC2             | 100           |                      |                              |               |            | Blade    | angle          |        |    |  |
| Update AC200   | with New Settin              | igs -         |                      |                              |               |            |          | R              | Co     | Fe |  |
|  |                              |               |                      | No. of Concession, name      | -             |            | Drive    |                |        |    |  |
| Airmas   | ster                         |               |                      |                              | -             |            | Stop     |                |        |    |  |
| Dagnostics   |                              |               |                      |                              | RPI           | M Test     |          |                |        |    |  |
| Trying serial port COM3<br>Trying serial port COM4<br>Connected OK |                              |               | Signal<br>Set signal |                              |               | Mo         | Monitor  |                | ogging |    |  |



Check loaded parameters against the parameter check sheet.

| Connected  | Load Par File               | Save Par File          | Paseword              |             |          | AC200 V4.4.   | 12           |   |       | (0) |
|--|-----------------------------|------------------------|-----------------------|-------------|----------|---------------|--------------|---|-------|-----|
| ght Variables  |                             |                        | Settings Beta         | Remote Con  | tol Misc | Q             | unatus       |   |       |     |
|  |                             |                        |                       |             | ,        | lode          | TAKE O       | NEE .   |       |     |
| Take Off RPM (110)   | 5700                        | 2345                   | Control W             | /ord (000)  | 0        |               | Set Second   |   | 5700  |     |
| Check DOM (111)  | 1000                        | 2222                   | Unfeather Timer (002) |             | 30       | 5             |              | eeu.  | 5700  |     |
| Callo PPM (111)  | 3400 2222                   |                        | RPM Sca               | aing (010)  | 243      |               | Actual S     | peed  | U     |     |
| Cruise RPM (112)   | 5000                        | 2057                   | DPM 0                 | Elter (011) | 80       |               |              | Mode<br>set Speed<br>set Speed<br>Error<br>rtrol State<br>rol Output<br>rol Output<br>rol Output<br>rol Current<br>lade angle<br>R<br>Ive<br>top<br>Imp<br>Imp<br>Imp<br>Imp<br>Imp<br>Imp<br>Imp<br>Im | -5700 |     |
| Hold RPM (113) 5000 2057                                       |                             | 110.001                | 10110                 |             |          | Control State |              | IDLE  |       |     |
| Hold RPM Max (120)   | old RPM Max (120) 5700 2345 |                        | Drive PWM             | Max (030)   | 254      |               | Control O    |   | 0     |     |
| Hold RPM Min (121)   | 4000                        | 1646                   | Drive PWM Min (031)   |             | 180      |               |              | 0   |       |     |
|  |                             | Start Pulse mSec (032) |                       | 0           |          | Mater Carrie  |              | 0   |       |     |
| Load Current 5   | Settings from AC2           | 00                     | Current I             | Limit (040) | 2500     |               | Motor Cu     | tern.   | 0     |     |
| Index MC20   | Owner Many Calling          |                        | Max Control E         | 2PM (100)   | 8000     |               | Blade a      | ngle  |       |     |
| opuate AC20  | u with rivery bettin        | 20                     | max control r         | (100)       |          |               |              | R   | Co    | Fe  |
|  |                             |                        | Min Control H         | RPM (101)   | 2000     |               | Drive        |   |       |     |
| Airma  | ster                        |                        | RPM Wan               | ning (102)  | 100      |               | Stop         |   |       |     |
| agnostics  |                             |                        |                       |             | RPM T    | st            |              |   |       |     |
| ying serial port COM3<br>ying serial port COM4<br>screected OK |                             | ~                      | Signal<br>Set signal  |             | Monitor  |               | Start Loggin |   |       |     |