

# Stratomaster Infinity

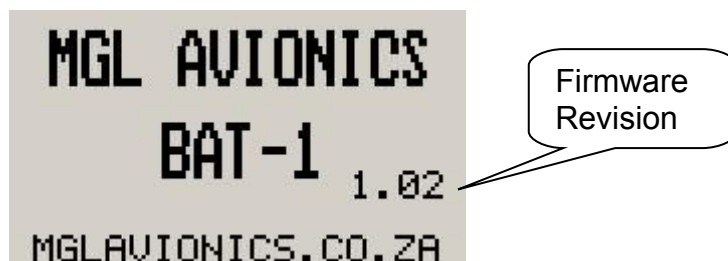
## Firmware revisions

Document - English 1.20

## Introduction

This document keeps track of firmware revisions for the MGL Avionics Stratomaster Infinity instrument range.

The revision number is displayed on the instrument's startup screen as follows.



### Note:

Please load default settings after a firmware upgrade. This is necessary in case the updated firmware contains new menu items / Unit settings etc. Please write down your current unit settings before loading the default settings. To load default settings, power up the instrument while pressing both the F1 and F2 keys simultaneously. The following message will be displayed.

LOADING  
DEFAULT  
SETTINGS

ALT-1	
Revision	Description
1.00	Initial release
1.01	Bug: fixed OAT max writing bug
1.02	Enhancement: swapped direction of the rotary control in the menu system
1.03	Enhancement: Stop menu from scrolling around
1.04	Enhancement: Removed menu exit timer
1.05	Enhancement: Moved the menu option VSI CAL from the calibrate menu to the VSI menu Enhancement: Added a compile flag for the ALT-2 functionality
1.06	Bug: Fixed altitude reading above 32000ft Enhancement: Made "Hg read 2 decimal places Bug: Barometer in "Hg or in mB
1.07	*****Only use with serial number 08001156 onwards***** *****Older units can be upgraded but the altitude has to be recalibrated***** Enhancement: Increased the altimeter accuracy
1.08	Bug: Fixed deviation/relative mode altitude unit when "Hg selected
1.09	Enhancement: Changed default contrast level
1.10	Bug: VSI m/s now goes negative
1.11	Enhancement: Added new Altitude + big VSI screen
1.12	Enhancement: Changed barometric pressure correction to use the range 940-1080mB

ALT-2	
Revision	Description
1.00	Initial release
1.01	Feature: Added in variable altitude resolution selection
1.02	Enhancement: Changed default contrast level
1.03	Bug: VSI m/s now goes negative
1.04	Enhancement: Added new Altitude + big VSI screen
1.05	Enhancement: Changed barometric pressure correction to use the range 940-1080mB

<b>ASI-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: cleaned up done menu item Enhancement: removed menu exit timer
1.04	Feature: Added in airtalk speed message for the FF-1
1.05	Enhancement: Changed default contrast level
1.06	Enhancement: The flight timer now increments in 1/99th of a hour with out any jump in minutes when "DEC" is selected Enhancement: Improved key press hold to increment 1,10,100

<b>ASX-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: cleaned up done menu item Enhancement: removed menu exit timer
1.04	Enhancement: Improved Altimeter resolution
1.05	Bug: Fixed Altitude reading above 32000ft Enhancement: Made "Hg read 2 decimal places
1.06	*****Only use with serial number 08001156 onwards***** *****Older units can be upgraded but the altitude has to be recalibrated***** Enhancement: Increased the altimeter accuracy
1.07	Bug: Fixed Max altitude unit when "Hg selected
1.08	Enhancement: Changed default contrast level
1.09	Bug: Fixed ASI High alarm shifted off the screen when great then 100
1.10	Feature: Added in option to switch altitude/airspeed position on main display
1.11	Enhancement: Changed barometric pressure correction to use the range 940-1080mB Enhancement: The flight timer now increments in 1/99th of a hour with out any jump in minutes when "DEC" is selected Enhancement: Improved key press hold to increment 1,10,100 Enhancement: Removed the flight stop automatically stopping even if manual is selected. The flight log set to manual is now fully manual.

<b>AV-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: Swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: Cleaned up ***done*** Enhancement: Cleaned up compass tape intervals Enhancement: Removed menu exit timer
1.04	Enhancement: Rewrote compass tape code
1.05	Enhancement: Rewrote 10degree bars Enhancement: 10 degree lines are thicker Bug: Fixed bug where mini turn and bank indicating wrong direction (bank mode only, gyro turning is ok)
1.06	Enhancement: Made 10 degree bars thin again, better viewing Enhancement: Made all magnetic headings with leading zeros Enhancement: Inlined the RX interrupt to avoid code bloating Bug: fixed menu turn and bank source when continuously changing between them
1.07	Enhancement: Minimised the use of trigonometry functions in attitude drawing Enhancement: Changed default contrast level
1.08	Enhancement: Added in a numeric pitch/bank angle readout option (attitude indicator) Enhancement: The compass box now has a clear background to make reading the compass easier (attitude indicator) Enhancement: Removed the warm up warning message
1.09	Enhancement: Added a menu option to select between a large/small aircraft icon
1.10	Enhancement: Extended the range exceeded message to 15 seconds Enhancement: Added comms packet overflow protection

<b>BAT-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around Feature: Added in French
1.03	Enhancement: removed menu timeout function
1.04	Enhancement: Changed default contrast level
1.05	*****Versions 1.04 and earlier cannot be upgraded to any later versions***** Enhancement: Changed hardware to use 50mV shunts only - Better accuracy/resolution Enhancement: Cleaned up voltage and current only displays Enhancement: Removed shunt mV selection from menu system

**E-3**

<b>Revision</b>	<b>Description</b>
<b>1.00</b>	Initial release
<b>1.01</b>	Enhancement: Stop menu from scrolling around
<b>1.02</b>	Enhancement: Removed menu exit timer
<b>1.03</b>	Bug: Fixed EGT and CHT span max value of 180C
<b>1.04</b>	Feature: Added in E-Type thermocouple Enhancement: Replaced EGT/CHT pictures
<b>1.05</b>	Enhancement: Changed the temperature and pressure menu to be the same as the TP-1 Bug: Fixed maintenance spelling mistake
<b>1.06</b>	Feature: Added in a volts measure feature (Needs hardware, units with version 1.05 and prior will show 0V) Rotate clockwise for max values, anticlockwise for Volts/flight time/hobbs
<b>1.07</b>	Enhancement: Changed default contrast level
<b>1.08</b>	Enhancement: Changed the RPM alarm increments to 10/100 Enhancement: Changed the RPM Scale increments from 500 to 100 with minimum of 500 Enhancement: Changed the Hobbs/Flight RPM to go down to 100 Enhancement: Changed Echlin sender to read MGL NTC
<b>1.09</b>	Bug: Fixed voltage max value over writing TC channel 1 Max value

<b>FF-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Bug: Fixed alarm bug when using more then 1 alarm
1.02	Enhancement: swapped direction of the rotary control in the menu system
1.03	Bug: Fixed decimal point x10 in tank calibration when using gallons
1.04	Bug: Fixed greater then 255 display in fuel calibration mode for metric units
1.05	Enhancement: Stop menu from scrolling around
1.06	Enhancement: Removed menu exit timeout function Enhancement: Cleaned up done menu item
1.07	Feature: Added in GPS NMEA for distance calculations Bug: fixed range calculation in km/nm when using airtalk
1.08	Enhancement: Changed speed to read airspeed/ground speed
1.09	Bug: Fixed tank reading on ascending ADC calibration for overrange in ADC value T1&T2
1.10	Feature: Added in French Feature: Added in Fuel tank level filters Feature: Added in dual fuel flow summation
1.11	Enhancement: Changed default contrast level
1.12	Enhancement: Added in a quick "FULL" button for filling the calculated fuel tanks
1.13	Enhancement: Added in 1 calculated tank, 1 sender tank and single fuel flow (Diff&sum incl.) Enhancement: Changed flow "sender" to read "turbine"
1.14	Enhancement: K-Factor resolution can be set in increments of 1 Enhancement: Improved key hold to increment 1,10,100 Enhancement: Added warning message for calculated tanks at startup
1.15	Bug: Fixed time/range calculation for diff fuel flow, single calculated tank, single physical tank
1.16	Bug: Fixed differential/summation dual flow,dual level (1 calc,1 physical tank) fuel level
1.17	Bug: Fuel tanks now truncates to max reading if adc readings are greater/less then last point (Only affects tanks with large resistances)

<b>GF-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: Removed menu exit timer
1.04	Feature: Added in French
1.05	Enhancement: Changed default contrast level

<b>MAP-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: Removed menu timeout function
1.04	Bug: Fixed KPA decimal point position Bug: Fixed PSI max/min value
1.05	Enhancement: Changed default contrast level
1.06	Enhancement: Change the MAP-1 to include a RPM readout (New Hardware)
1.07	Enhancement: Improved accuracy of the MAP-1 (Requires calibration on previous firmware revisions)
1.08	Enhancement: Added a selection to display RPM in percent or RPM Enhancement: Added a mag check feature Enhancement: The flight timer now increments in 1/99th of a hour with out any jump in minutes when "DEC" is selected Enhancement: Improved key press hold to increment 1,10,100 Enhancement: Removed the flight stop automatically stopping even if manual is selected. The flight log set to manual is now fully manual.

<b>RTC-2</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: Removed menu timeout function
1.04	Enhancement: Changed default contrast level
1.05	Enhancement: Removed "Done" message form OAT max value reset
1.06	Enhancement: Removed split second from the time display Enhancement: Added OAT to time display

<b>RV-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Enhancement: swapped direction of the rotary control in the menu system
1.02	Enhancement: Stop menu from scrolling around
1.03	Enhancement: Removed menu timeout feature
1.04	Bug: Fixed Maintenance spelling
1.05	Enhancement: Changed alarm resolution to 10/100 with minimum 500 (For gyros) Enhancement: Changed scale resolution from 500 to 100 with minimum 500 (For gyros) Enhancement: Changed alarm to high alarm Feature: Added in low alarm feature Enhancement: Changed hobbs/flight rpm to go down to 100
1.06	Enhancement: Changed default contrast level
1.07	Enhancement: Added a selection to display RPM in percent or RPM Enhancement: Added a mag check feature Enhancement: The flight timer now increments in 1/99th of a hour with out any jump in minutes when "DEC" is selected Enhancement: Improved key press hold to increment 1,10,100 Enhancement: Removed the flight stop automatically stopping even if manual is selected. The flight log set to manual is now fully manual.



<b>RV-2</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Bug: Fixed bargraph that always went to maximum when going over 100%

<b>TC-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Bug: fixed EGT/CHT probe when using TCBARS mode, CHT after EGT uses EGT probe
1.02	Bug: fixed TC to go down to -270 degrees C
1.03	Enhancement: swapped direction of the rotary control in the menu system
1.04	Enhancement: Stop menu from scrolling around
1.05	Enhancement: Removed menu timeout function Enhancement: padded span text in horizontal bar mode
1.06	Bug: Fixed TC BARS Celsius to Fahrenheit menu conversion Enhancement: Cleaned up alarm line in TC BARS Enhancement: Clean up TC BARS display menu
1.07	Feature: Added in E-Type thermocouple
1.08	Enhancement: Fixed menu scrolling going down in display menu when TC BARS selected
1.09	Enhancement: Changed default contrast level

<b>TP-1</b>	
<b>Revision</b>	<b>Description</b>
1.00	Initial release
1.01	Bug: Fixed alarm bug when using more then 1 alarm Enhancement: Change to long abs Bug: fixed LM335 reference
1.02	Enhancement: swapped direction of the rotary control in the menu system
1.03	Enhancement: Stop menu from scrolling around
1.04	Enhancement: Removed menu timeout function
1.05	Enhancement: Added in "None" to sensor menu selection (Temp and Pressure) Feature: Added UMA linear pressure support in sensor menu Enhancement: Made VDO pressure and VDO temp more accurate Enhancement: Added in support for low pressure sender (0.1 PSI) Enhancement: Reshuffled menu items in the pressure/temp menu for easier access
1.06	Enhancement: Changed linear pressure to a separate input on the DB9 connector
1.07	Enhancement: Added in pressure resistive/linear option Enhancement: Added in pressure/temperature on/off option Enhancement: Reshuffled menu option for easy data entry
1.08	Enhancement: Changed default contrast level
1.09	Enhancement: Major change, TP-1 can now do dual pressure or dual temperature. Menus changed. Enhancement: Moved the UMA sender to use the normal pressure input (May need to remove pullup resistors on old UMA senders) Enhancement: Changed the UMA input to a 4-20mA input
1.10	Bug: Fixed pressure display in single vertical mode (PSI/alarm on only) Enhancement: Cleaned up value displays in horizontal mode
1.11	Bug: Changed "VDO" text for 4-20mA sender to read "ROTAX"
1.12	Enhancement: Dropped the lower pressure value for 10 psi to 1 psi Enhancement: Added Westach temperature sender Enhancement: Removed the pressure max ohms menu item Enhancement: Removed the pressure max pressure menu item Enhancement: Added pressure support for the VDO 2 bar, VDO 5 bar pressure sender
1.13	Bug: Fixed alarm flashing on channels if ch1=temperature and ch2=pressure
1.14	Enhancement: Added "Hg pressure unit

## Instruments in the *Stratomaster Infinity* range

<b>ALT-1</b>	Precision encoding altimeter and vertical speed indicator
<b>ALT-2</b>	Precision encoding altimeter and vertical speed indicator with a serial RS232 transponder output
<b>ASI-1</b>	Airspeed indicator (ASI) with automatic flight log
<b>ASX-1</b>	Encoding aviation altimeter with serial output and airspeed indicator (ASI)
<b>AV-1</b>	Artificial horizon and magnetic compass indicator
<b>BAT-1</b>	Battery voltage and current monitor
<b>E-3</b>	Universal engine monitor
<b>FF-1</b>	Fuel Computer (single or dual fuel tanks)
<b>GF-1</b>	+/-10G tilt compensated dual range G-force meter
<b>MAP-1</b>	Universal pressure indicator
<b>RV-1</b>	Universal engine RPM and rotor RPM Indicator
<b>RV-2</b>	Universal turbine RPM / RPM factor display
<b>RTC-2</b>	Aviation real time clock (RTC) and outside air temperature (OAT) display
<b>TC-1</b>	4-Channel thermocouple indicator
<b>TP-1</b>	Universal temperature and pressure gauge