IAS SENSOR

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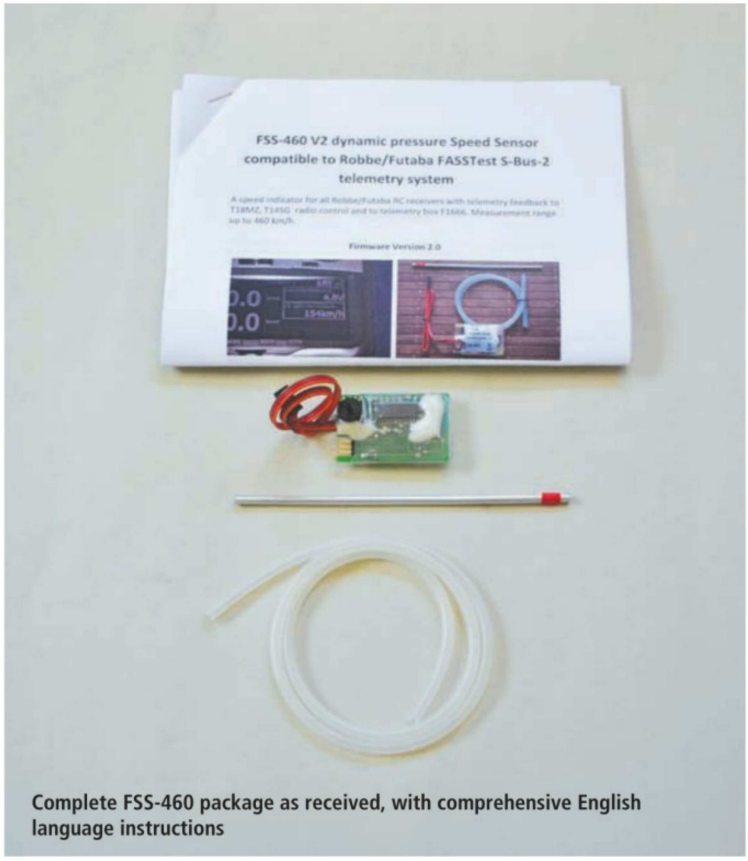
Colin tries out an Indicated Air Speed sensor from CB Elektronics

Model jet flying has undergone somewhat of a revolution over the last decade, with the wholesale adoption of gas turbine propulsion, the move from 35 or 72 MHz to 2.4 GHz transmission and now the increasing availability and usage of telemetry systems and equipment. Most of the latest radio systems have telemetry functionality built-in, and there are standalone telemetry packages for older sets or the few current systems that still lack this technology. Many of these systems offer a GPS sensor that amongst other parameters offers speed data, but of course this does not give any indication of the model's actual flying speed, the speed information is of the model over the ground, so that a full power level pass flown into the wind can give a very different reading compared to it flying downwind, the actual variation being dependant on the wind speed. Even worse is the situation when the model is diving or climbing, as the GPS speed data is only accurate when the model is in level flight, any deviation from this will give a false reading, the steeper the dive or climb the more inaccurate the speed figure will be.



Complete FSS-460 package as received, with comprehensive English language instructions

Due to this the only really accurate way of measuring airspeed is to use a pitot tube based system, such as this new system from CB Elektronics in Germany, which currently can operate with Futaba FASSTest, Graupner/SJ HOTT and Multiplex MSB systems. Available in three versions, the FSS-170 reading up to 170 km/h (106 mph) is currently for use with Multiplex systems only, whilst the FSS-330 which reads up to 330 km/h (205 mph) and the FSS-460, which as might be expected reads up to a maximum of 460 km/h (286 mph) operates with all three radio systems.

The unit under review is the FSS-460 for Futaba FASSTest telemetry systems, at present this means that it can be used with either the 18MZ or 14SG radios, or with the robbe telemetry box, and with R7003SB, R7008SB and R6308SBT receivers depending on whether the radios or the telemetry box are being used. Minimum reading is down to 30 km/h (18 mph), with an accuracy of + 5 km/h (3 mph), whilst the wide operating voltage range of 4.6 to 9.0 volts allows its use with standard or HV receivers.

Particularly interesting is that the speed data is both displayed on the transmitter screen/telemetry box as well as being vocalised, in the case of the 18MZ this can be either through the in-built speaker or via an earphone. How often the speed data is reported can be set on the transmitter, for the purposes of the review this was set to a one second gap, which appeared to work very well.

The unit is very compact and light, note the rotary switch, which is used during the set-up procedure

Reverse of the unit, with the black pressure sensor evident at the top left corner, this being where the silicon tubing is attached

Installation

The complete FSS-460 package consists of the very compact main unit which is only 31 x 51 x 20 mm in size with a weight of 20 grams, the aluminium pitot tube, silicone tubing to run between the main unit and pitot tube and a full set of instructions. Installation could not be much simpler, the pitot tube was simply glued into place, making sure that the open end was well clear of the model structure so that it can get an accurate reading of the air pressure, in this case it was positioned right at the front of the nose moulding of my Xcalibur sport jet. The silicone tubing was then run from the pitot tube to the main unit, which was placed inside the forward fuselage in a position where the air pressure would not vary significantly during the flight, so it was kept well away from the nose retract aperture etc. A single servo type lead was run between the main unit and the R7008SB receiver being used, this lead plugging into the S-Bus 2 socket of the receiver.

Setting Up

Setting up the system with the 18MZ was quite simple, being an almost identical procedure to that used with Futaba telemetry sensors – the instructions are very helpful here, and a transmitter switch was selected so as to be able to switch the verbal speed readings off and on as required. Testing of the system's operation was simple, just blowing down the pitot tube gave an immediate reading on the transmitter screen, whilst at the same time the speed was repeated verbally.