

S/N: 2105, 2128-2129, 2261, 2387, 2447, 2606, 2673, 2835, 2946, 3150, 3209, 3242, 3277, 3339, 3357, 3390, 3413, 3423, 3457, 3462, 3467, 3477, 3532, 3552, 3692, 3900, 3916-3917, 4043, 4109, 4137, 4267, 4301, 4338, 4345, 4350, 4386, 4512, 4536, 4565, 4576, 4611, 4629, 4647, 4767, 7204, 7491, 7737, 7811

General description - Motion sensor SFIM 85T31 Automatic Pilot

A. Purpose

The motion sensor is integral with the control linkage through a lever. Any movement of the yaw pedal is conveyed by the appearance at the output of the motion sensor of a +27 V pulse that can be directly used by the helicopter's AP channel.

B. Description

Figure 1

The motion sensor is in the form of a cylindrical-shaped unit composed of:

- an control shaft (2) mechanically connected to the yaw pedal and integral with a potentiometer "P",
- a 6 pin male connector (1),
- a printed circuit board.

C. Operating principle

Figure 2

The motion sensor transforms the angular variations of the yaw pedal to which it is connected into a pulse of variable width and constant amplitude 0 - 27 V.

This pulse is used in the yaw channel of an AP during a coordinated turn operation.

The "M1C" amplifier receives a positive or negative voltage from the cursor of potentiometer "P" on the input (+).

Input (-) is re-looped onto the output, this is closed as the field-effect transistor "Q1" is blocked.

The DC voltage is then transmitted to input (-) of the "M1D" circuit.

Its output signal, depending on the polarity of the input voltage is applied on one of the comparators "M1B" (case of a positive voltage) or "M1A" (case of a negative voltage).

The activated comparator changes its state (-15 V -0). The positive front applied to the grid of the field effect transistor unblocks it.

"Q1" conductor transmits the input voltage to the circuit "M2" input (+) with a delay to the integrator circuit "R4"- "R5"- "C2". The "M2" circuit reverses the signal before applying it on the input (+) of the "M1D". The latter therefore receives the same signal on both its inputs, it moves to zero.

This variation causes comparator output to return to -15 V of the blocking the transistor "Q1" again.

The output pulse of the comparator is applied to transistors "Q2" then "Q3".

Any movement variation at the input is conveyed by appearance at "Q3" output of 0 - 27 V pulse corresponding to the motion sensor.

Terminal A +27 V of the engaged channel

Terminal D + 27 V movement detection

Figure 1: SFIM 85T31 Automatic Pilot - General description - Motion sensor

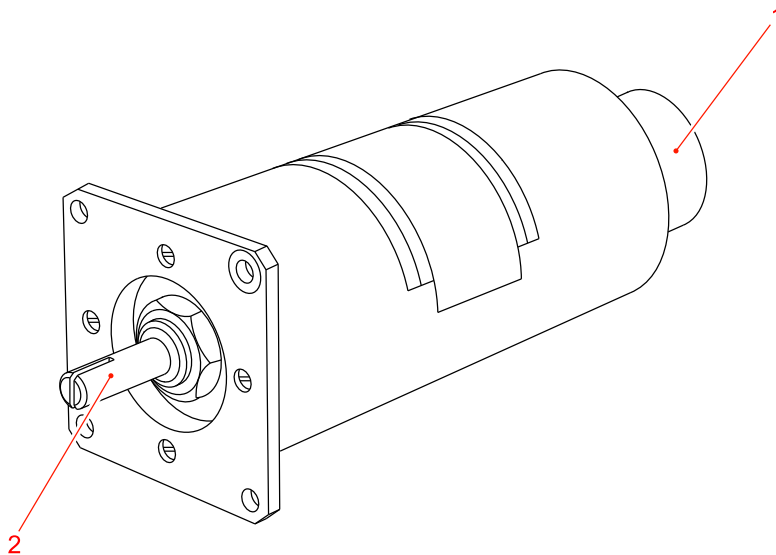
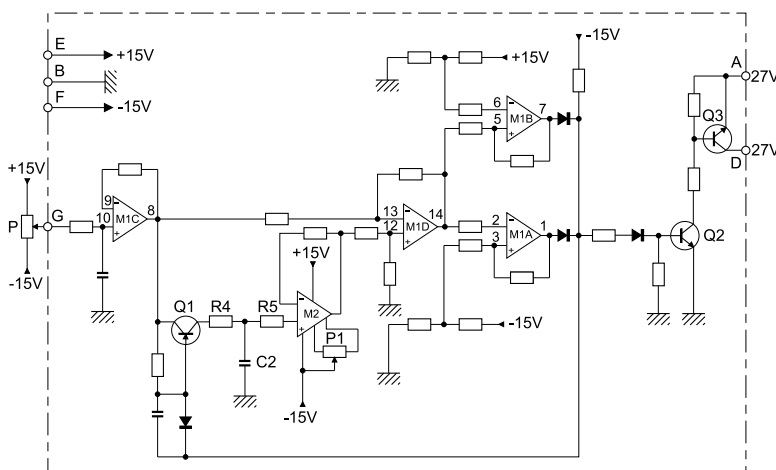


Figure 2: SFIM 85T31 Automatic Pilot - General description - Motion sensor



End of Document