

Flapcontrol

FCTRL0002

Usermanual

© 2002 by Missaggia Engineering GmbH

Contents

Legal notice	2
Description of function:	3
Basic Configuration Procedure:	3
Description of function (Details):	4
AUTOMATIC-Mode (SW2 on AUTO):.....	4
MANual-Mode (SW2 on MAN):	4
Wiringdiagram D-Sub connector I1 (male)	5
Wiringdiagram D-Sub connector J1 (female)	6

Legal notice

Those in the following described assemblies and/or devices have not been tested and are not certified to be mounted or used in any kind of aircraft or any other machinery. The installation of those assemblies and/or devices their use happens in each case on own responsibility of the user !

In case of injuries, caused by the possession or by the use of the assemblies and/or devices described above, any adhesion, within the bounds of the legally permissible, will be rejected !

Description of function:

Fctrl0002 controls the landing flaps with a toggle-switch (UP/DN) and moves them automatically to predefined positions.

With the built-in codeswitch you may set several values and therefore activate corresponding working-/hardware modes.

In an emergency you may switch the AUTO/MAN-switch from the automatic- into the manual-mode and control the flaps directly by the flap-switch. Thereby, the entire electronic-circuits will be disengaged!

ATTENTION: When reactivating the automatic-mode, the "electronics" tries to bring the flaps back into to the originally pre-selected position !

Basic Configuration Procedure:

Setting up Flaps-Step Positions

1. Entire system should be currentfree (no power-source connected (batteries,...)) respectively switched off !!
2. Install wiring completely according to the wiringdiagram and DO NOT CONNECT the plugs (I1, J1) to the device!
3. At the NON connected device set the codeswitch to position 8 or 9! (no automatic movements on these positions)
4. Connect the previous wired connectors to I1 and J1!
5. Switch power on or connect the batteries! => Red LED's begin to flash, in the 1 second pulse. (system is working now !!)
6. Set AUTO/MAN-switch to position AUTO.
7. Set mode-switch to Pos. 0.
8. Move flaps with up/down-switch to the lowest position (Pos 0, FLAPS-FULL DOWN).
9. Set mode-switch to Pos. 1.
10. Move flaps with up/down-switch up to the second lowest position (Pos 1, FLAPS-2).
11. Set mode-switch to Pos. 2.
12. Move flaps with up/down-switch up to the upper position (Pos 2, FLAPS-1).
13. Set mode-switch to Pos. 3
14. Move flaps with up/down-switch up to the upper most position (Pos 3, FLAPS-FULL UP).
15. Set mode-switch to Pos. 4. => automaticmode !!
ATTENTION: Flaps are moving immediately into the preselected position (Red LED's shows the value in binary form)!!

Setting up Flaps-Position Display

16. Move flaps with pulses to up/down-switch down to Pos. 0 (FLAPS-FULL DOWN)
17. Move position-indicator of flaps-display down to lowest position turning the screw at potentiometer R7.
Turndirection: CCW => Indicator DOWN
CW => Indicator UP
18. Move flaps with pulses to Up/Down-switch up to Pos. 3 (FLAPS-UP).
19. Move position-indicator of flaps-display up to highest position turning the screw at potentiometer R8.
Turndirection: CCW => Indicator UP
CW => Indicator DOWN
20. The potentiometerscrews at R7 and R8 as well as the mode-switch must become secured with securing varnish or glue against rotating!
21. CONGRATULATIONS!! The setup is completed, the device is ready for use !

Description of function (Details):

All information of the flap control system setup- and working-data is displayed at the four red LED's as binary codes!

(below LED-display will be called "display")

AUTOMatic-Mode (SW2 on AUTO):

Code-Switch-pos.: Mode/Affect:
(SW1)

0	display FLAP-Pos-Step to define, flash with 1sec. rhythm (display dark, due to the pos 0!!)
1	display FLAP-Pos-Step to define, flash with 1sec. rhythm
2	display FLAP-Pos-Step to define, flash with 1sec. rhythm
3	display FLAP-Pos-Step to define, flash with 1sec. rhythm

SETUP-MODES (Pos 0,1,2,3)

The flaps can be moved by pressing/lifting the flap-switch into the desired step-position (0..3). After each operation of the flap-switch, the controller gets the current flaps-position and saves it to its internal memory.

AUTO-MODE/Step-Mode (Pos 4)

4	Display FlapPos-Step selected to move-to, flashing Flap-Switch Up/Dn active, counts FlapPos-Steps up and down. Thereby, the controller positions the flaps immediately to the selected (and displayed) step-position.
---	--

TEST-MODE (Pos 5,6,7)

5	Display ADC-Value, L-nibble (0x00F)	(Valuerange 0..0x3FF)
6	Display ADC-Value, M-nibble (0x0F0)	
7	Display ADC-Value, H-nibble (0x300)	

MANUAL-MODE (Pos 8, 9)

8	Display Code-Switch-Pos, flashing with 1sec. rhythm
9	Display Code-Switch-Pos, flashing with 1sec. rhythm

Flaps-switch up/dn active, controls directly the output-relays RL1/RL2. Therefore, the may be moved "manually" ! As long as the switch is being operated, so long the flaps are also moving in the corresponding direction !!

MANual-Mode (SW2 on MAN):

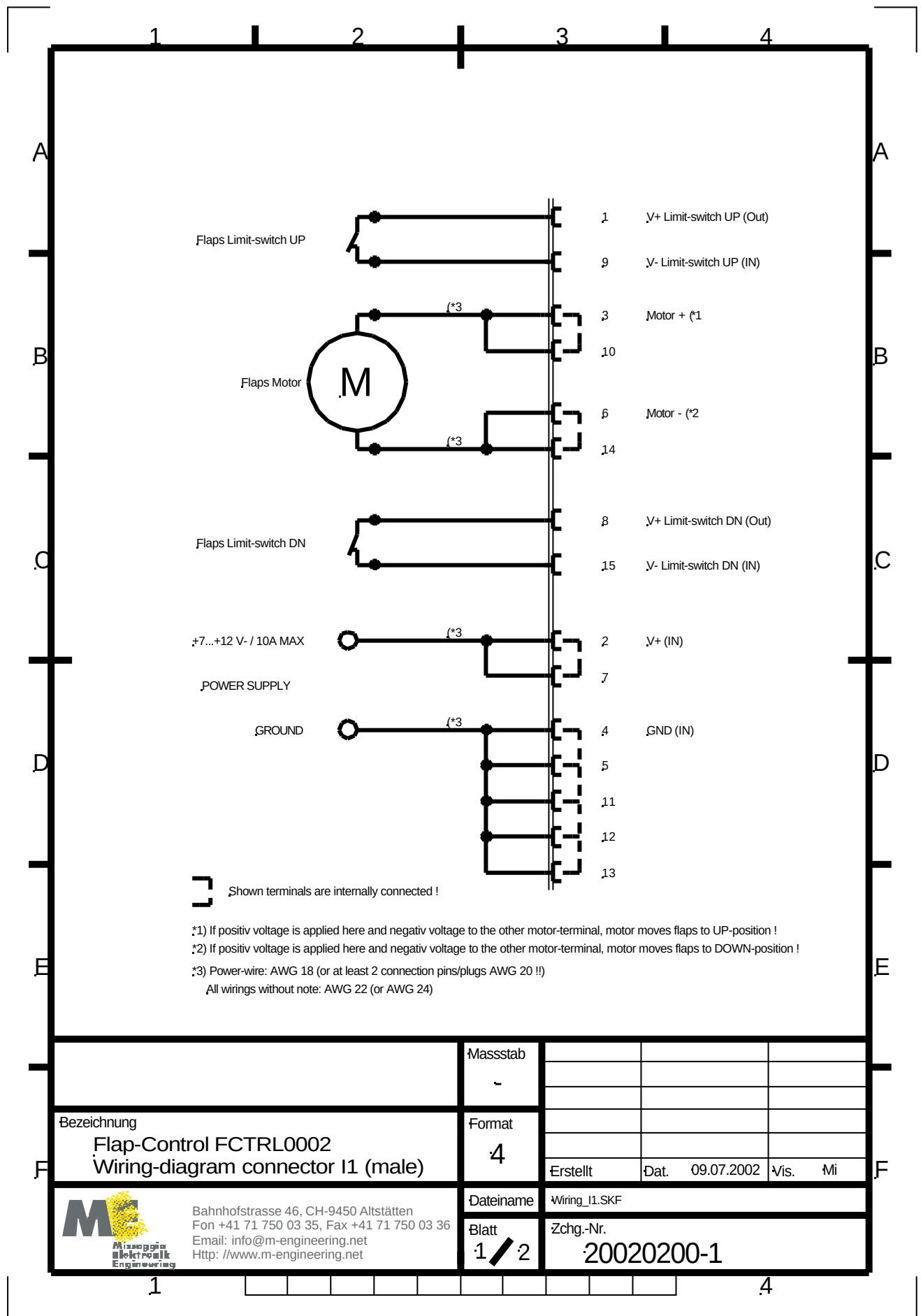
If electronics should fail during automatic mode, you may operate the AUTO/MAN-switch to switch to complete manual-mode.

In this mode, complete electronics is bypassed!

The relays of the flaps-motor are controlled now directly by the flaps-up/dn-switch (SW3).
The flap-motor „moves“ as long as the flap-up/dn-switch is being operated.

In this way, operating of the flaps is secured also when electronic loss. The power supply of electronics must still fuction, otherwise the output-relays can't be driven !!) !

Wiringdiagram D-Sub connector I1 (male)



Wiringdiagram D-Sub connector J1 (female)

