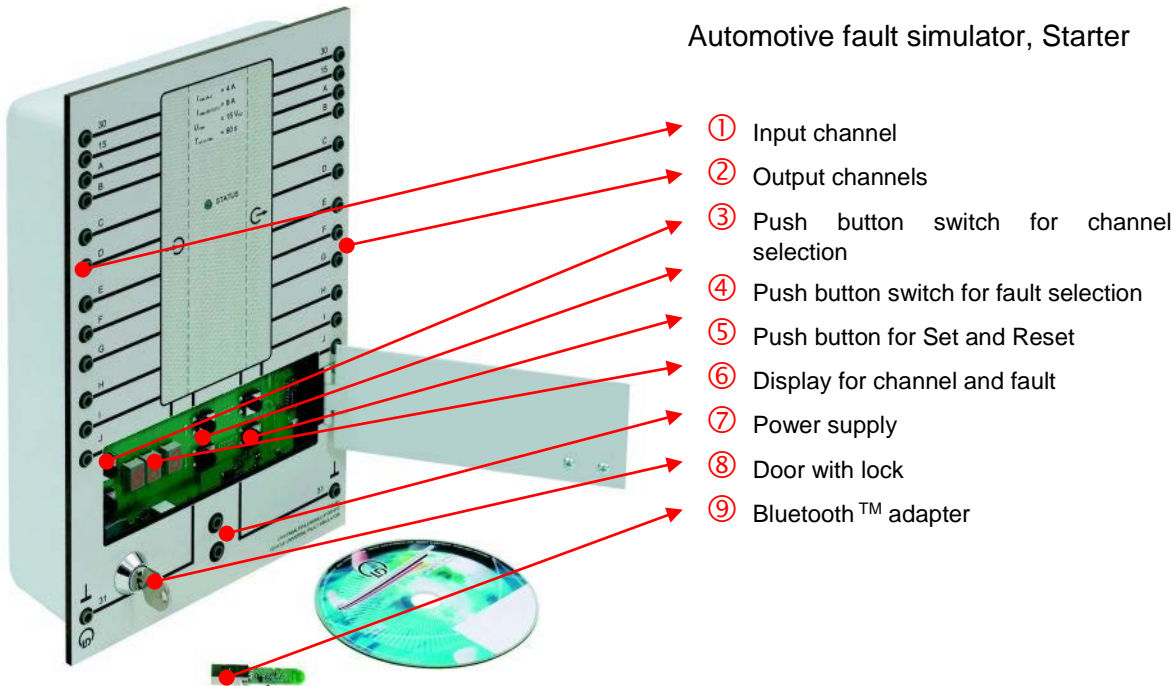


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User manual 738 4911 and 738 4911S

Automotive fault simulator, Starter



- ① Input channel
- ② Output channels
- ③ Push button switch for channel selection
- ④ Push button switch for fault selection
- ⑤ Push button for Set and Reset
- ⑥ Display for channel and fault
- ⑦ Power supply
- ⑧ Door with lock
- ⑨ Bluetooth™ adapter

1 Description

The fault simulator is used for connecting wires with faults. For this purpose the wire is conduct over a „channel". To this **channel** the fault is switched to.

2 Set of equipment supplied

- Fault simulator
- Bluetooth™ adapter
- CD ROM

3 Technical data

Power supply	12V- 15V DC
I_{max} (channel A-J and Y)	4A
I_{max} (channel 30,15 and 31)	8A
Channels at the front side	13
Channels at the rear side	6

4 Start up instruction

4.1 without PC

Connect the power supply to the ⑦ with 12V – 15V DC. Now put the device at the position into the experimental setup, at which the fault is supposed to be switched.

Reference:

As long as no fault is switched, all channels have transition!

First of all you select the channel, to which you want to switch a fault. This happens via the channel selection push button switch ③. In sequence to 30, 15, A - J, 31, Y1 - Y6, at what Y means the backside 6-point socket.

The channel is represented on the left of the two displays ⑥.

Safety notes :

Please check before you make a fault that you make not a short circuit over the power supply or battery. The short circuit to plus (30 and 15) or to ground (31) makes only sense in CAN – BUS or at some sensor inputs. The most faults in the connection is interruption or a connection resistor.

Select a fault:

- 0 No fault
- 1 open
- 2 Short circuit to 30(battery voltage)
- 3 Short circuit to 15(battery voltage after main switch)
- 4 Short circuit to ground
- 5 Serial resistor 500 Ω
- 6 connection with 500 Ω to line 30(battery voltage)
- 7 connection with 500 Ω to line ground
- 8 Short circuit between A/B or C/D
- 9 Open of the channel A+B or C+D

The selection is done over the push button ④ the fault will be represented on the right display ⑥

The fault will be activated with the push button “SET” ⑤

With the push button “RESET” ⑤ the fault is deactivated.

The selection and display unit can be locked with the door ⑧ . **Attention:** all units have an individual key!

4.2 Run with PC

Connect the Bluetooth dongle with the USB port from the PC. Wait until Windows 7 or 8 install wizard has finished its job.

4.2.1 Connect the device

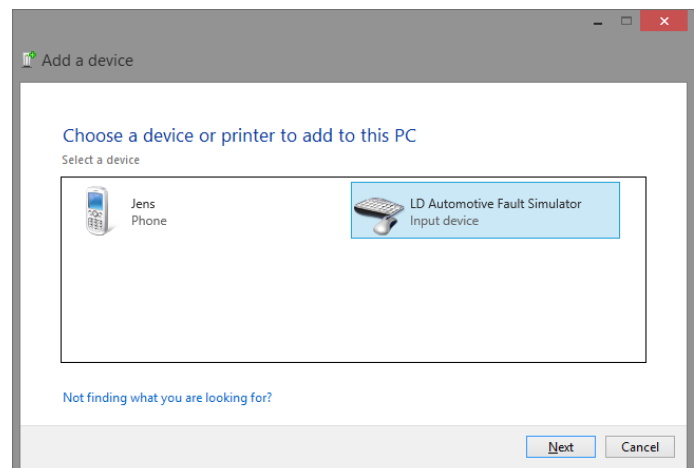
4.2.1.1 Connect using FaultSimCfg

Start the tiny program FaultSimCfg.exe and press the button “...” .The following box pops up:

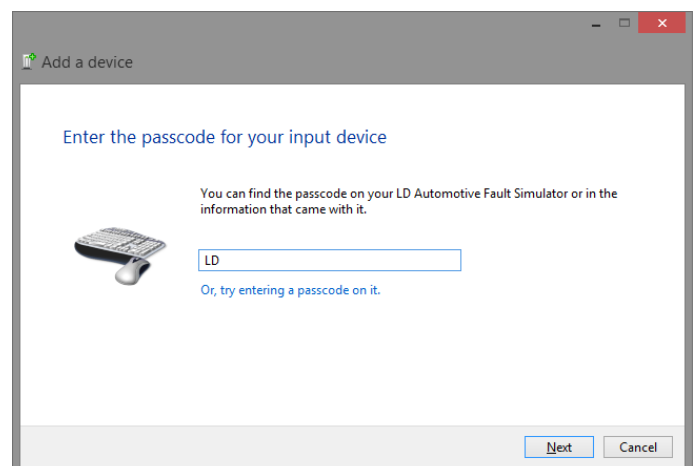


Push the button “Add New Device”.

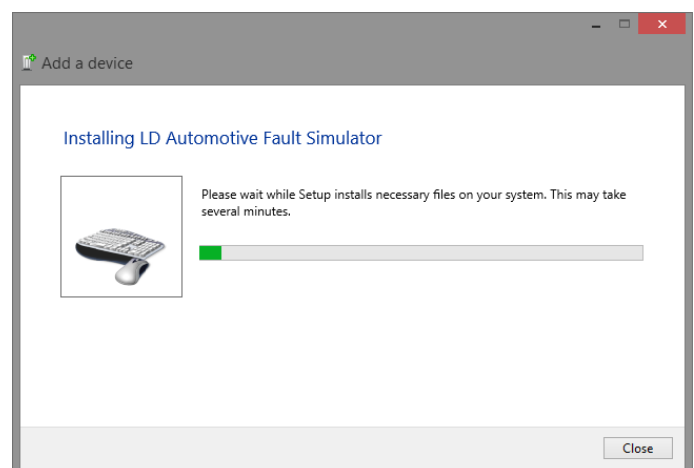
The following window pops up:



Select the device “LD Automotive Fault Simulator” and press “Next”. When you are requested to enter the key, please enter “LD” in capital letters.



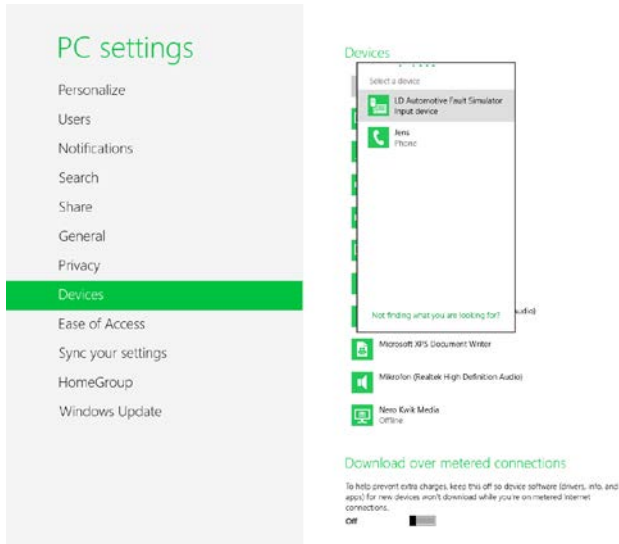
After that the installation will be finished:



Close the program **FaultSimCfg** without further actions.

4.2.1.2 Connect the device using Windows 8

Press the Bluetooth Icon in the task bar twice. The screen changes as follows:



Click "Add device" and select "LD Automotive Fault Simulator". When asked enter the key "LD" in capital letters!

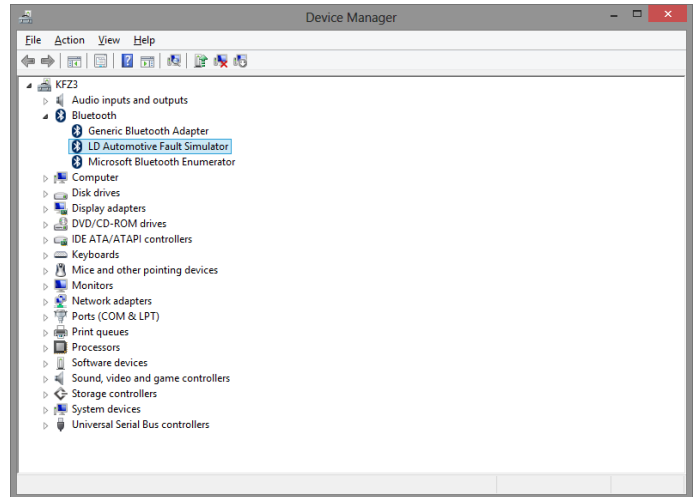
4.2.2 Configuration file

Using any text editor, please open the file **Config.ini** in the folder where the file **FaultSim.exe** is located at. For each fault simulator device, enter a section as follows:

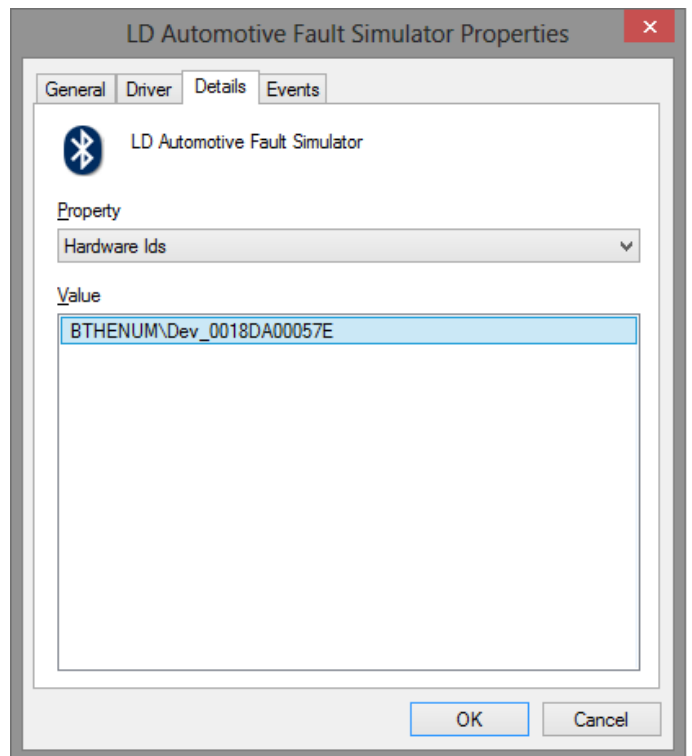
[Individual number]
Comment=*Device's name*
BTAddress=xx:xx:xx:xx:xx:xx

How to find out the device ID?

Open the Windows **device manager**, select **Bluetooth** and **LD Automotive Fault Simulator**.



Right click and choose **Properties**.



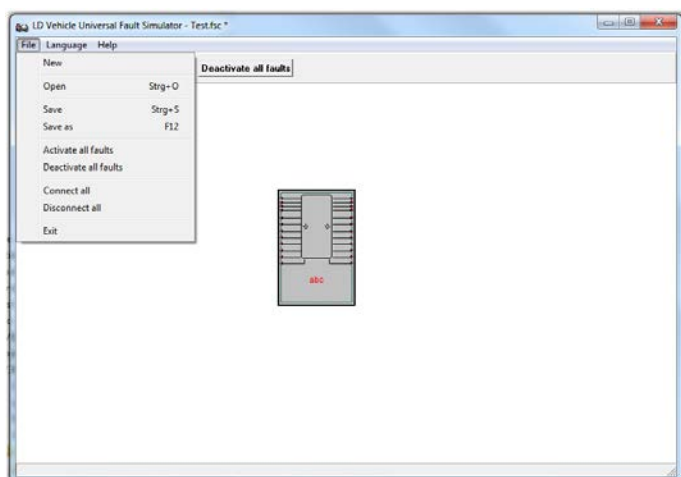
Select "**Details**" and the property "**Hardware IDs**". The number shown is the address without the ":".

Example for device "Unit 1" with Bluetooth address 00:18:DA:00:05:7E:

[1000]
Comment=Unit 1
BTAddress= 00:18:DA:00:05:7E

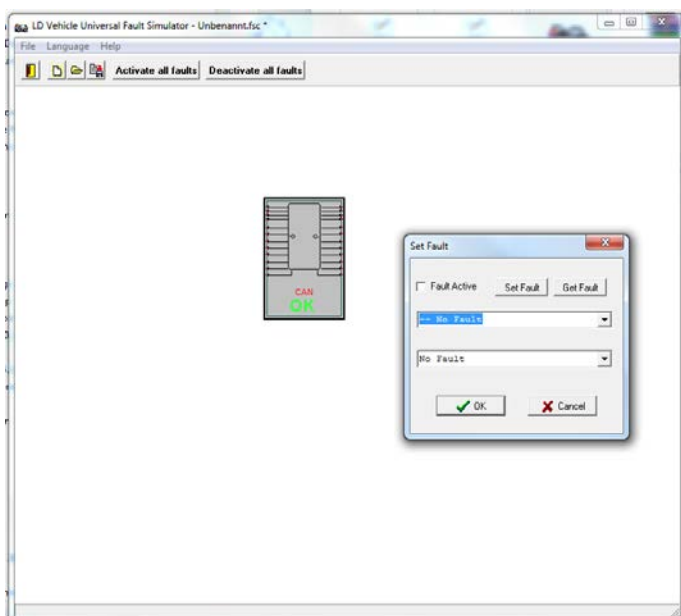
4.2.3 Remote control of the fault simulator

Now start the program **FaultSim.exe**. Right click into the program and select „**New fault simulator**“. Then click „**File**“ and „**Connect all**“. In the fault simulator's display now „**P C C**“ must be shown.



The fault simulator's icon must show now „**OK**“.

Then right click on the fault simulator icon and select „**Set fault**“. Choose channel number and fault number, tick „**Fault activ**“ and then press button „**Set fault**“.



Un-tick „**Fault active**“ and pressing the button „**Set fault**“ deactivates the fault again.

5 Connection of external equipment

5.1 Fault possibilities for Common Rail 740105/6 and Fault simulator 738491

For the engine management we use the backside connection.

Connect a 6pin cable from the panel **Engine management 740105/6-02** to the socket input of the **fault simulator 738491**. With a new cable make the connection from the **Fault simulator 738491** output to **Engine management 740105/6-02**.

Cable 51

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	na	Y1	
2	B28: Signal	Y2	1
3	na	Y3	
4	B11/4 : Signal	Y4	1
5	na	Y5	
6	na	Y6	



Cable 52

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	na	Y1	
2	B17: Signal	Y2	1
3	na	Y3	
4	na	Y4	
5	B2/5 : Signal	Y5	1
6	na	Y6	

Cable 56

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	B40: Signal	Y1	1
2	B40: Ground	Y2	1
3	B40: +5 V	Y3	1
4	na	Y4	
5	na	Y5	
6	na	Y6	



5.2 Fault possibilities for Xenon 7381821 and Fault simulator 738491

For the xenon headlight we use the backside connection #84. Connect the 6pin cable from the **Xenon headlamp** to the socket output  of the **fault simulator 738491**. With a new cable make the connection from the **Fault simulator 738491** input  to **Xenon panel 7381821-01**.

Cable 84

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	Stepper 1: Plus	Y1	1
2	Stepper 1: Minus	Y2	1
3	Stepper 2: Plus	Y3	1
4	Stepper 2: Minus	Y4	1
5	na	Y5	
6	na	Y6	

5.3 Fault possibilities for Automatic Gear 739600 and Fault simulator 738491

For the automatic transmission we use the backside connection. Connect a 6pin cable from the **Control unit AR25/35 739600** socket #33 or #34 to the socket input  of the **fault simulator 738491**. With a new cable make the connection from the **Fault simulator 738491** output  to the corresponding socket of the **Gear substitute panel 739601**.



Cable 33

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	U13.1	Y1	1
2	U13.2	Y2	1
3	na	Y3	
4	U13.3	Y4	1
5	Power supply	Y5	1
6	U10.1	Y6	1

Cable 34

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	na	Y1	
2	na	Y2	
3	U10.2 +	Y3	1
4	na	Y4	
5	U10.2 -	Y5	1
6	na	Y6	



5.4 Fault possibilities for ABS/ESP 739650 and Fault simulator 738491

For the ABS/ESP system we use the backside connection. Connect a 6pin cable from the **Control unit ABS/ESP 739650** to the socket input  of the **Fault simulator 738491**. With a new cable make the connection from the **Fault simulator 738491** output  to either of the **wheel replacement panels 739652(1)** or **739653(1)**.

Cable 10/20/30/40

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	na	Y1	
2	na	Y2	
3	na	Y3	
4	Wheel sensor +	Y4	1
5	Wheel sensor -	Y5	1
6	na	Y6	

5.5 Fault possibilities for Sensor panel 1 739707 and Fault simulator 738491

For the sensor panel 1 we use the backside connection. Connect a 6pin cable from the **Sensor Panel 1 739707** sockets #25 or #26 to the socket output  of the **Fault simulator 738491**. With a new cable make the connection from the **Fault simulator 738491** input  to the corresponding socket of the **instrument cluster panel 7396021**.

Cable 25



Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	Brake pads (32a/32)	Y1	1
2	Brake pads common L&R	Y2	1
3	Ground	Y3	1
4	Wiper fluid level	Y4	1
5	na	Y5	
6	na	Y6	

Cable 26

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	Coolant level	Y1	1
2	na	Y2	
3	na	Y3	
4	na	Y4	
5	na	Y5	
6	Brake fluid level	Y6	1

5.6 Fault possibilities for Oil sensor 739706 and Fault simulator 738491

For the oil sensor panel we use the backside connection.

Connect a 6pin cable from the **Oil Sensor Panel 739706** to the socket output  of **fault simulator 738491**. With a new cable make the connection from **Fault simulator 738491** input  to the **instrument cluster panel 7396021**.

Cable 34

Cable pin number	Pin number at Engine management	Fault channel	Fault Number or Functions
1	TOG signal	Y1	1
2	na	Y2	
3	Ground	Y3	1
4	Engine temperature	Y4	1
5	na	Y5	1
6	na	Y6	