

## Installation and operating instructions for a remote indication for use in two-cylinder systems

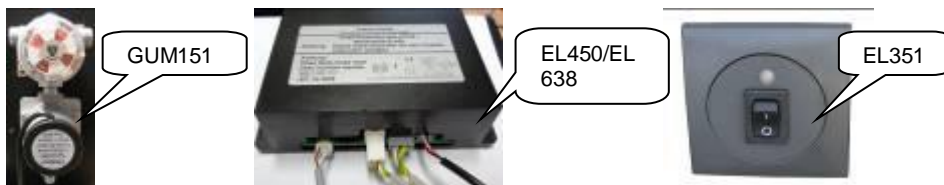
Read these instructions carefully before putting the unit into operation!

Remote indication kit art.no. EL464, indication without switch EL463, indication with switch EL466

### 1. Purpose and description of unit, technical data

The use of a TopTron remote indication shows the state of the service cylinder (full or empty) inside the vehicle. The remote indication could be integrated in the patented TopTron system Crash Protection Unit (CPU) as well as for use in two-cylinder systems without CPU as used in caravans.

#### Integration of the remote indication in a two-cylinder system with CPU



A CPU system with the components automatic changeover GUM151, control unit EL450/EL638 and indicating panel EL351 (see picture) is required. For assembling the remote indication kit EL464 please follow the installation instructions. It is not possible to assemble the remote indication with former models of the control unit EL350 as well as with former models of the changeover GUM150, GUM200, GUM100, GUM101.

#### Use of the remote indication in a two-cylinder system without CPU

An automatic changeover GUM102 (similar to GUM151 but without electric valve) is required. For assembling the remote indication kit EL464 please follow the installation instructions as well as for assembling the indication panel EL463 (without switch) respectively EL466 (with switch).

Only duly qualified persons authorised for this purpose may carry out the installation of the gas and electric components including the cabling and to subsequently perform testing and acceptance.

#### Technical data

**Gas type:** Liquefied gas – propane / butane

**Changeover regulator:**

approved for use in vehicles according to DIN-EN16129

Inlet port:	M20x1.5 male thread
Inlet pressure:	0,3-16bar
Outlet pressure:	30mbar
Flow rate:	1,5kg/h

#### **Control unit EL450/EL638 (in case of use with CPU):**

Operating voltage:	12V DC (10V to 15V)
Power consumption:	< 1A for approx. 1 second during opening of valve < 30mA (0,36W) during operation
Reset time:	approx. 45 seconds

#### **Solenoid valve (in case of use with CPU):**

closed in de-energised state, class A to EN161, suited for gases of gas group 1, 2 and 3

#### **Kit remote indication EL464**

Plastic clipping with an integrated reed switch as well as made up with a 4m cable with a reverse polarity protected plug-and-socket connection.

Operating voltage:	12V DC
Power consumption:	approx. 2 mA in case of empty service cylinder; No consumption in case of normal operation

#### **Indication EL463 (in case of use without CPU):**

Permanent LED indication green (service cylinder is full) respectively yellow (service cylinder is empty).

Operating voltage:	12V DC
Power consumption:	approx. 15 mA in case of empty service cylinder; Approx. 7,5 mA in case of normal operation

#### **Indication EL466 (in case of use without CPU):**

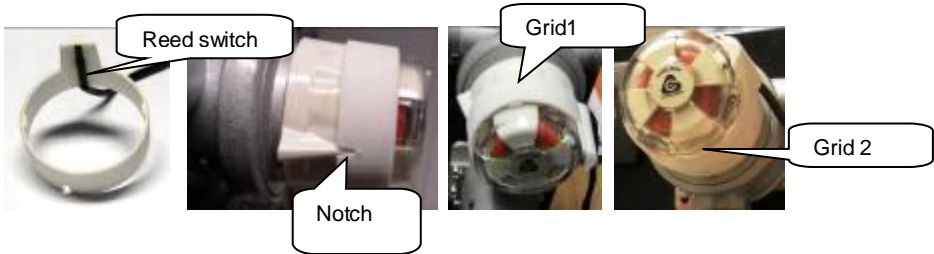
LED indication green (service cylinder is full) respectively yellow (service cylinder is empty) by pressing the switch.

Operating voltage:	12V DC
Power consumption:	max. 15 mA in case of pressing the switch; No consumption without pressing the switch

## **2. Installation instructions**

Only duly qualified persons authorised for this purpose may carry out the installation of the gas and electric components including the cabling and to subsequently perform testing and acceptance.

### **Assembling of the clipping with an integrated reed switch**



**Attention! Mechanical pressure on the reed switch should absolutely be avoided while assembling the plastic ring.**

The notch of the plastic ring has to be assembled on the lever of the changeover (see picture). Then, click both grids into place. After assembling the plastic ring should not be removable

The leadthrough in the cylinder container wall has to be sealed so that it will be gastight. Be sure especially in the gas cylinder container to lay the cable so that it cannot become damaged. Should the cable become damaged, always replace the clipping together with the cable so as to reliably prevent that there will be a potential ignition source in the gas cylinder container. The electrical connection or the connection to a cable extension must not be done in the cylinder container.

**Connection in case of use with CPU**



Connect the reverse polarity protected plug-and-socket connection to the marked input of the control unit EL450/EL638 (see picture). The control unit provides the power supply. Then fix the label with symbols on the indication panel EL351 (see picture).

**Connection in case of use without CPU**



Install the indication EL463 (without switch) respectively EL466 (with switch) at an easily accessible location inside the vehicle. Connect the reverse polarity protected plug-and-socket connection directly to the indication unit (see picture). Concerning the 12V power supply use a suitable cable meeting the specified fusing value. Fuse rating: 0.5A minimum. When connecting the supply voltage 12V DC, make absolutely sure that the polarity is correct. The supply voltage must be direct voltage 12V DC. Polarity reversal may cause destruction of the unit.

### **3. Commissioning the system**

- Open the cylinder valves slowly.
- Pay attention that hoses and pipes are connected in a gastight way.
- In case of use with CPU press the switch on the panel EL351.
- The LED indicator will now be flashing yellow, that is, an automatic system test is carried out.
- Press the reset button of the excess flow check valve for approx. 10 seconds to allow pressure to build up in the line. While doing this action both the service cylinder and the reserve cylinder the indication on the changeover lever has to show green.
- When the installation is in a proper condition, the LED indicator will illuminate green.

#### **LED indications on panel EL351 in case of use with CPU**

LED off	System off; gas supply off
LED green	System on; gas supply on; service cylinder is full
LED red	Gas supply off; excessive tilt or acceleration values have caused shut off
LED yellow	System on; gas supply on; service cylinder is empty
LED flashes yellow	self-test for approx. 2 seconds after switching on
LED flashes once red	valve not connected to control unit, internal fault of control box or short circuit in the electric valve
LED flashes two times red	too high voltage (supply voltage >15.0V), check batteries
LED flashes three times red	too low voltage (supply voltage <10.0V), check batteries Reset time < 45 seconds;

#### **LED indications on panel EL463 without switch in case of use without CPU**

LED off	system off; check cable connection and batteries
LED green	remote indication works; service cylinder is full
LED yellow	remote indication works; service cylinder is empty

#### **LED indications on panel EL466 with switch in case of use without CPU**

The LED indication works by pressing the switch. If the LED indication does not work after pressing the switch, check cable connection and batteries.

LED green	service cylinder is full
LED yellow	service cylinder is empty

## **Operation of changeover device**

- After you made sure that the switch remains green for both positions of the lever, direct the arrow on the lever to the right or to the left. The arrow will point to the cylinder that will be in service.
- The indicator is red (yellow on the remote indication), which means that gas in the service cylinder has been consumed. As the cylinder is now empty, the installation operates on the reserve cylinder.
- The indicator is red (yellow on the remote indication), but the gas in the service cylinder has not been quite consumed; a release of the excess flow valve or dirt particle in the inlet of the regulator could have been caused the changeover reaction.

## ***Replacement of the empty cylinder***

- Rotate the lever by half turn, the cylinder that was previously in reserve, becomes now the service cylinder, and the indicator becomes normally green. If it remains red (yellow on the remote indication), it means that the installation has operated for a too long period of time on the reserve cylinder, so this cylinder is now empty as well. In that case, you will have to replace both cylinders.
- Close the cylinder valve on the empty cylinder. Disconnect the cylinder.
- Connect the new full cylinder. Reset the excess flow check valve and check the connections for correct tightening and tightness by using a leak detection foaming product. It is advisable to check if the excess flow check valve has been properly reset by pointing the lever arrow towards the new gas cylinder, the indicator should remain green.
- After you ended the checking operation, point the lever arrow again to the gas cylinder from which some gas has already been consumed, in order to fully empty it. The new gas cylinder will now be the reserve of the installation.
- By using only one cylinder the arrow on the lever has to be directed to the connected side and the not connected side has to be closed tightly with a cap nut M20x1,5. We recommend connecting always two cylinders.

## **4. Reset and putting the system out of operation in case of use with CPU**

Press the switch on the operator panel EL351 to close the solenoid valve. The LED indicator will go out. After switching off the system a 45 second wait is necessary before starting the system again. Otherwise the CPU panel could show a failure by flashing three times the red LED.  
For putting the system out of operation close the cylinder valves. If the system is to be left out of operation for a longer period of time, disconnect the battery – see the operating instructions for the vehicle.

## **5. Service address**

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