

# GLÖTZL Baumeßtechnik

## HAND AIR QUANTITY REGULATOR

**Type: T 1 ALR 16 PF**  
**Art. No.: 36.01.01**

The portable automatic air quantity regulator T 1 ALR 16 PF is used for manual measurement up to max. 16 bars of:

Stress cells and settlement cells



All components, inclusive a 200 bars/ 1 l compressed air cylinder are placed in a portable, splash-proof casing.

The most important tools are placed in the cover of the casing.

**Weight:** 13 kgs

**Dimensions:** Length: 420 mm,  
 depth: 310 mm  
 height: 210 mm

**Operat. time:** Cylinder filling 140 bars,  
 tubing length 100 m,  
 measuring value approx. 2 bars,  
 meas. time of each meas. point  
 1.5 min.  
 = approx. 60 measuring points

By measurement of the cells with compressed air, a consideration of level difference between pressure cell and measuring station is not necessary.

By an automatic regulator, the quantity of air supply to the cells is kept constantly in two sizes, for filling of the tubing and measurement of the cell.

The searched pressure is indicated by a manometer, Ø 160 mm, accuracy class 0.6 % f.s.

For control of the operability of the instrument, a manometer for the air reserves of the compressed air cylinder is installed. The cylinder pressure - reduced by a pressure reducer - is indicated at a prepressure manometer and can be regulated.

One pressure cell can directly be connected to the air quantity regulator, further ones via change-over manifolds.

**Meas. ranges:** (Please indicate when ordering.)

0-0.6 / 0-1 / 0-1.6 / 0-2.5 / 0-4 / 0-6 / 0-10 / 0-16 (indications in bars)

**Accessories:** Transfuse connection for filling of the small compressed air cylinder from a big bottle  
 Spare compressed air cylinder 200 bars / 1 l

### **Setting to work, pneumatic:**

Open compressed-air cylinder and check operating pressure.

Operating cock below manometer-cylinder pressure „AUS“.

Open operating cock and adjust operating pressure at prepressure manometer at approx. 1 bar higher than the measuring range.

At this adjustment, the measuring range can be used in full scale..

However, you must take notice that in case of improper handling the measuring range can be exceeded and thus the measuring system will be overloaded at one manometer.

When adjusting the prepressure equal to that of the measuring range, this range can only be used by 90%.

The prepressure is adjusted with the toggle besides the carrying handle of the box.

The prepressure is dependant on the cylinder pressure so that perhaps a subsequent adjustment becomes necessary.

Connect measuring line to the instrument and also connect it with the pressure line of the pressure cell or with the change-over manifold – connection change-over box.

Remark: When using the instrument T 1 ALR D2/PF, adjustment has to be done in measuring range 2.

### **Measurement:**

Open operating cock. In case of change-over units open isolating valve of the required measuring point.

Turn measuring valve to position „Füllen“. Now the pressure cell is pumped with approx. 4-fold air. The measuring value is increasing.

If no more increase of the value can be recognized, the measuring valve has to be turned to position „Messen“. The pressure cell is now pumped with normal mass flow rate. The display of measuring values becomes somewhat smaller due to the reduction of flow loss in the pressure line.

The measuring value is now settled and can be recorded after no more change is recognized.

Switching to the next measuring point is done by opening of the next valve and closing of the measured valve. For switching to the next point, the pressure build-up of the measured line is used for filling of the measuring point which has to be measured next.

By this, savings in time and compressed air.

After termination of measurement close compressed-air cylinder, close operating valve and decouple pressure line. The air quantity regulator is discharged.

The operating cock should be closed at each measuring stop to avoid unnecessary air consumption.

Remark: When using type T 1 ALR D/PF, switch off digital display.

### **Cells for model tests, type EM 28 and EF 45**

These cells should only be operated in position „Messung“ due to the small-dimensioned measuring line and the valve stroke.

### **Function control of cells**

Control of operability of cells can be done after measurement has been carried out.

Close operating valve. The manometer display is somewhat dropping (flow loss of line-cell) and is remaining at the closing point of the valve.

### **Function control of air quantity regulator**

Close pressure line connection at the air quantity regulator. Open operating valve. The display of measuring value is increasing. Close operating valve at approx. 75% of measuring value. Display is still somewhat increasing and then must remain. If a dropping of the value is recognized, a leakage must be in the line system. In this case, retighten the screwings resp. check with soap water where the leakage is.

A function control should be carried out- if possible – before a measuring application.

### **Filling of compressed-air cylinder**

Connect small compressed-air cylinder to the big one by transfuse connection.

Completely open valve of small cylinder, only slightly open big cylinder till an overflow of compressed air can be recognized. After 5 minutes, open big cylinder somewhat more. After further 5 minutes and after the small cylinder is cooled down, close at first small cylinder and then big cylinder, remove from transfuse connection and put into the instrument.