

GLÖTZL Baumeßtechnik

HAND AIR QUANTITY REGULATOR

Type: M 1 ALR 16 (D)
Art.- No.: 36.10.01 (02)

The hand air quantity air regulators, types **M1 ALR 16** and **M 1 ALR-D**, are used for manual measurements up to max. 16 bars resp. up to 17.5 bars of **stress cells and settlement cells**.



Figure: M 1 ALR 16

P036.10.01F001.tif



Figure: M 1 ALR D

P036.10.01F002.tif

By measurement of the cells with compressed air, a consideration of level difference between 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 tubing and measurement of cell.

M 1 ALR 16: The searched pressure is indicated by a manometer, \varnothing 160 mm, accuracy class 0.6.

M 1 ALR D: The searched pressure is converted into a measuring current of 0-100 mV by an electric pressure transformer, accuracy class 0.3, and digitally displayed.

For control of the operability of the instrument, a prepressure manometer is installed which is indicating the arising air pressure at the entry of device.

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

Measuring ranges: Please indicate when ordering.

M 1 ALR 16: 0-0.6 / 0-1 / 0-1.6 / 0-2.5 / 0-4 / 0-6 / 0-10 and 0-16 bars

M 1 ALR D: Standard measuring range: 0–10 bars
 Further measuring ranges by exchange of the electric pressure transformer
 0-0.7 / 0-1 / 0-3.5 / 0-7 / 0-17.5 bars; display digital each 0–100.0

Models:

M 1 ALR 16 Air supply by external compressed-air cylinder

Accessories: Cylinder pressure reducer with connecting pipe
 Measuring tubing 2 m long with quick coupling

M 1 ALR D Air supply by external compressed air cylinder, mains connection 230 V, 50 Hz

Accessories: Cylinder pressure reducer with connecting pipe
 Measuring tubing 2 m long with quick coupling

M 1 ALR DP Air supply by external compressed air cylinder

Current supply by installed accu with charger

Accessories: Cylinder pressure reducer with connecting pipe
 Measuring tubing 2 m long with quick coupling

Weight: Approx. 12 kgs

Dimensions: Standard casing 19", 4 HE, length 510 mm, depth 330 mm, height 220 mm

Setting to work, pneumatical:

Open compressed air cylinder and control operating pressure.

Operating cock below the manometer-cylinder pressure to position „OFF“.

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

In this adjustment, the measuring range can be used in its full range.

However, please have attention that the measuring range can be exceeded in case of improper maintenance and thus the measuring system of a manometer can be overloaded.

When adjusting the initial pressure equal to the measuring range, it can only be used for 90%.

The initial pressure is adjusted with the toggle besides the carrying handle of case.

The initial pressure depends on cylinder pressure so that a subsequent adjustment may be necessary during operation.

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

Measurement:

Open operating cock. For change-over manifolds, open stop valve of the required measuring point.

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

If no more increase of value can be recognized, the measuring valve has to be turned to position „measurement“. The cell is now pumped with normal measuring discharge rate. The measured value indication is becoming somewhat smaller, caused by decrease of flow loss in the pressure line.

The measured value is now finding a certain level and can be recorded after no more change occurs.

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

Saving in time and compressed air.

After terminated measurement, close compressed air cylinder. Close operating valve and disconnect pressure line. The air quantity regulator is discharged.

To avoid any unnecessary air consumption, the operating cock should be closed at each measuring pause.

Cells for model tests, types EM 28 and EF 45

By the small-dimensioned measuring line and valve lift, these cells may only be operated in position „measurement“.

Functional inspection of cells

The inspection of cells for operability can be done after measurement has been carried out.

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

Functional inspection of air quantity regulator

Close pressure line connection at air quantity regulator. Open operating valve. Display of measured values is increasing. Close operating valve at approx. 75 % of measured value. Display is still increasing a little and must then stay. If a decrease of value is observed, then a leakage must be in the line system. In this case, the screwings must be retightened resp. is must be checked with soap water where the leakage is.

If possible, a functional inspection should be carried out before each measuring application.

Filling procedure of compressed air cylinder

Connect small compressed air cylinder with filling connection to big compressed air cylinder. Take care that intact nylon sealings are fitted at both connection ends of the filling connection.

Completely open valve of small cylinder, open big cylinder only a little till an overflow of compressed air is remarkable or hearable. After approx. 5 minutes, open big cylinder somewhat more. After further 5 minutes and when small cylinder is cooled down, firstly close small cylinder, secondly close big cylinder. Remove from filling connection and insert into the measuring instrument (air quantity regulator).