DMP700

Differential Pressure Meter

APPLICATION AND USE

DMP700 is a digital manometer for the measurement of differential pressure in HVAC systems including circuits where PICVs are installed.
DMP700 is an easy to operate and reliable IP67 instrument for measuring differential pressure across PICVs equipped with pressure test points (P/T plugs).
The measured differential pressure value is to be compared with the minimum required differential pressure across the valve for a given flow rate (minimum required differential pressure values are indicated on the PICVs data sheets).
The system and the pump can be adjusted in order to have the required differential pressure across the critical valve. This is an important condition for the balancing of the system.
DMP700 is not a flow meter.

KEY FEATURES

- IP67
- 0-7 bar operating range
- 10 bar maximum static pressure
- 0-50°C (ambient)
- Backlit function
- Zeroing function
- Hold function
- Range lock function
- Max/Min
- Batteries 2xAA, not included

FUNCTIONAL BUTTONS

ON - OFF
Press key for **on** and key for **off**.
Automatic switch-off after 12 minutes, unless any key is activated or the instrument is in **MAX/MIN** mode.
If ◇ key is held when unit is switched on, automatic switch-off function will be disabled until the unit is switched off.

The performances stated in this sheet can be modified without any prior notice.

MAX/MIN RECORDER (◇ MAX/MIN)
Press ◇ key to start. The instrument will display alternating ^v symbols and current reading. Press again to display the maximum pressure reading and ^ symbol will be displayed. Press again to display the minimum pressure reading and v symbol will be displayed. Press again to return to the actual pressure display.

DISPLAY HOLD (◈ HOLD)
Pressing ◈ key freezes the display. The symbol will appear on the display. Press ◈ key again to return to normal display.

UNITS OF PRESSURE (⟳ UNT)
Press key ⟳ to select required units of pressure. Chosen units will be saved when the instrument is switched off.

ZEROING (0.0 ZERO)
In order to achieve maximum accuracy it is recommended to zero the instrument in the orientation it will be used before taking any measurements.
Ensure both ports are open to atmosphere. If indicated pressure is within 1% f.s. of the factory calibrated zero, press key which will adjust the reading to zero.

RANGE LOCK (A/R RANGE LOCK)
This instrument has a Range Lock feature that displays readings to the best resolution, shown by **A/R** on the display. This can be turned off by pressing the key. The display will then use the same display resolution for the entire pressure range.
This is useful to stop the display switching between resolutions where there are fluctuations in pressure. To cancel this mode, press the **A/R** key again.

SMOOTHING MODE (= SMOOTH)
Press = key and the instrument continuously averages the last four measurements to give a more stable reading on the display. Press = key again to return to normal measurement.

DISPLAY INDICATIONS

BATTERIES
Two AA or equivalent cells (not supplied). Follow instructions on reverse of instrument for fitting/replacement.
When symbol appears on display, replace batteries.

OUT OF RANGE
If pressure exceeds the scale range **Out** will appear on the display.

BACKLIGHT
Press and hold ON key.

BATTERIES

The instrument is provided without batteries.
Unscrew two screw placed in the back, remove the cover and place two batteries model AA 1.5V such as polarity indication.

When install batteries pay attention to the polarity.

HOSES CONNECTION

Unscrew union nut and press hose through union nut ①.
Fit hose piece on the hose nipple of the manometer.

Screw union nut on by means of a single-head wrench ②. At the same time counter-hold the union nut of the manometer ③ to avoid damage to the nipple of the manometer.

Hereafter the manometer is ready for use.

GENERAL ADVISEMENT

Keep clean the instrument.
Dispose the instrument in a dry place.
Don't expose the manometer to frost.

After each use:
- remove the water from the hoses,
- remove batteries,
- protect the needles put on the protection head.

WARNING
Particular care should be taken not to over pressure the device as this may rupture the sensor membrane. This is not covered by the manufacturers warranty.
NOTE The differential/gauge instruments will only measure positive pressures i.e. positive pressure applied to the positive port, or negative pressure applied to the negative port.

They are not suitable for use with corrosive substances or cyclic hydrocarbons, e.g. motor oil, transmission fluid and Freon.
To use DMP700 with these components, isolation must be provided in the form of a buffer, such as a mineral oil or dry air.

PICVs VALVES COMMISSIONING

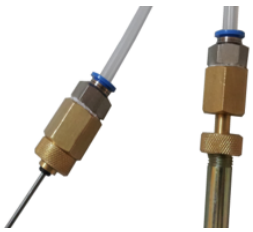
Valve Caliber Setting

Valve caliber setting will be made according to the nominal operating flow rate in the terminal unit.
For caliber setting refer to the following technical literature:

Valve Code	Document
VLX	Libra_DBL577en
VSXT..PBP	VSXT..PBP_DBL586en
BV..P	BV..P_DBL548en

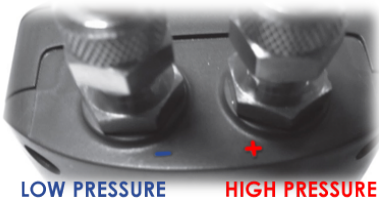
PRESSURE MEASURAMENT

1



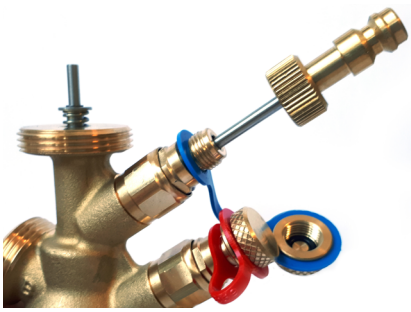
Unscrew the ring nut and remove the protection head of the needles.

2



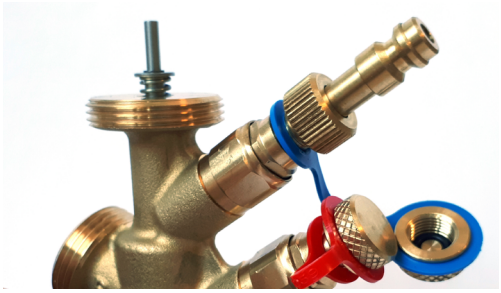
Before inserting the needles indentify the positive one and the negative one. Make sure that positive and negative are connected to the relevant positive and negative P/T port on the valve.

3



Put the needles into the P/T ports of the valve.

4



Screw the union nut on. **The red P/T port valve is referred to high pressure (inlet port) while the blue P/T port is for low pressure (outlet port).**

5

Proceed with differential pressure measurement. Turn ON the DMP700 and perform the measurement operation.
Hoses could get filled with water, it is not an anomaly if this occurs.
Valves work properly when differential pressure across the valve is in the range from 35kPa to 600kPa.
With differential pressure lower than 35kPa, valve might not be able to keep the flow constant according to the caliber setting. The maximum applicable differential pressure is 600kPa.
Within the 35kPa to 600kPa differential pressure condition, the flow rate through the valve is kept within a band of ±10% of the flow rate value corresponding to the caliber setting.