



INSTRUCTION MANUAL FOR DP INDICATORS / DP INDICATING SWITCHES 180 MODEL

INTRODUCTION

SWITZER Style 180 Differential Pressure indicator / switch is a rugged instrument featuring simplicity of design to provide dependable and efficient service. Read instructions below carefully before installing the instrument.

OPERATIONS

This instrument works on the difference between two pressures acting on opposite sides of the pressure

sensor (diaphragm). Variations in pressure difference will cause the diaphragm-magnet assembly to move in proportion to this change. A rotary magnet located in a separate cavity follows the movement of the diaphragm magnet and indicates the pressure change on the gauge scale.

On switch models, the micro switches are located adjacent to the pressure chamber and are activated when the diaphragm magnet field interacts at a present point with magnet placed on the microswitch lever.

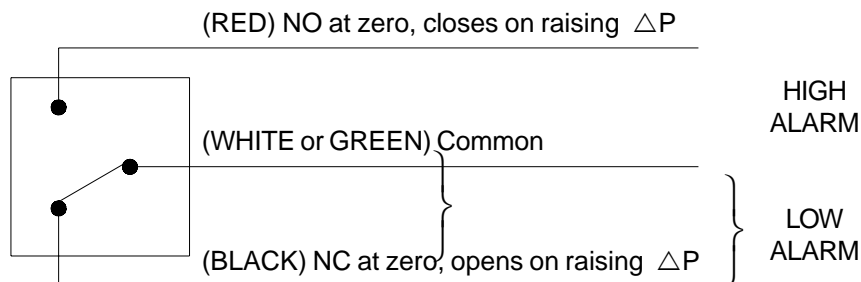


Fig 1

SERVICING / MAINTENANCE

There are only two areas where this instrument requires attention. One is erratic pointer action and the other is diaphragm failure. Before doing maintenance, switch off power and remove switch connection and turn off pressure to tubing connected to gauge. Remove tubing connections from gauge parts (by holding the pressure housing end cap with 1 inch C-spanner). Remove bezel screws, bezel, glass and glass gaskets.

Erratic Pointer Action

Check to see if the pointer shaft lower trunnion bearing screw is in position. If the bearing screw is too far, it will grip the pivot shaft and produce uneven action or no displacement of the pointer at all. Bearing screw is located at the rear end of the pointer which is filled with rubber solvent. Adjust the bearing screw such that 0.8 mm (approx.) end play of the pointer shaft is established. After proper pointer action has been re-established, seal

the bearing screw using wax. If the bearing screw has been found damaged, replace it.

Diaphragm Failure (Refer Fig.2 overleaf)

This could occur through accidental overpressure abuse or mis-application. Remove the clamp between the dial housing and the pressure chamber. Then remove all M5 screws and remove the top half of the pressure housing (High Pressure port).

Remove the Diaphragm and Area Plate assembly along with the stem. Hold the stem in a vice or hold with a grip plier firmly and unscrew the M4 screw on the top area plate. Ensure that the magnet fixed at the bottom end of the stem is not damaged while fixing the stem in the vice.

Remove the damaged diaphragm and place the new diaphragm on the bottom area plate. Position the top area plate and tighten the assembly to the stem. Before inserting the stem inside the body, ensure that the range

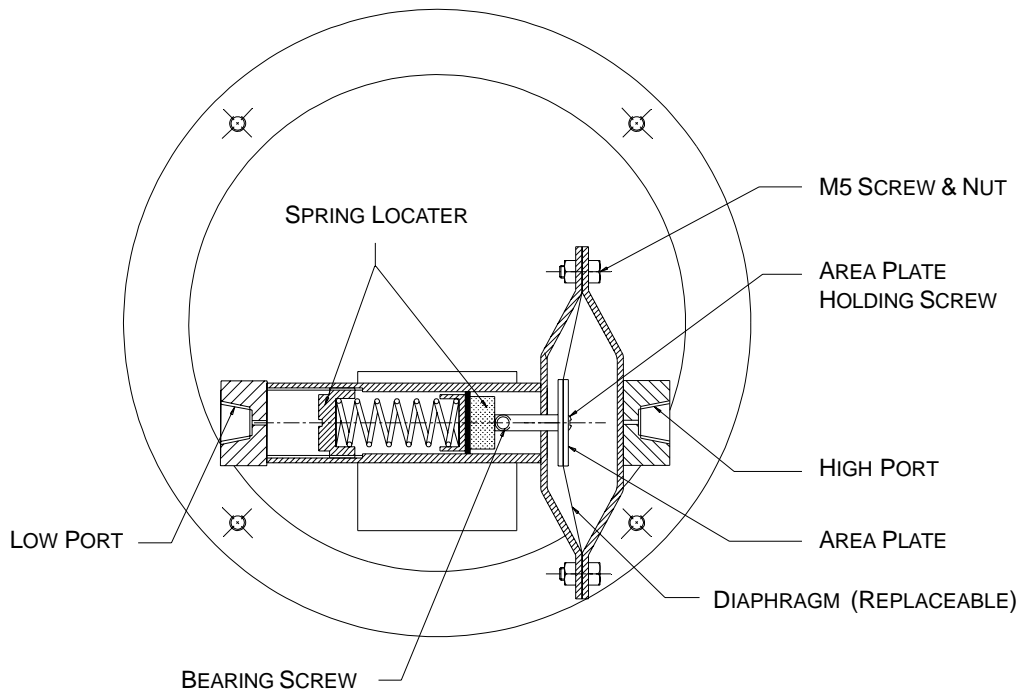


Fig 2

spring is seated properly inside the spring locater. If not the instrument's performance will be affected.

Place the diaphragm assembly and high pressure chamber on the low pressure chamber and align all screw holes and tighten all M5 screws. Position and tighten the dial clamp which is provided to arrest inadvertent twisting motion between the Dial housing and the pressure housing.

The reassembly is now complete. Hold the instrument with Dial vertical and tap. Pointer should be on zero and the instrument in calibration as the new diaphragm acts only as a pressure barrier with no spring effect.

If the pointer is off zero slightly, loosen the guage clamp screw and slide pressure housing until pointer tip is at zero while holding the instrument dial vertical. After zero has been established tighten the clamp screw.

If zero could not be established in the above manner, then input a pressure exactly equal to 50% of the range. Use

a master guage with 1% or better accuracy to read the pressure. Remove the pointer and re-fix it at 50% of the scale. The zero and the calibration will be established.

CAUTION : Do Not Remove the Pointer from its shaft, unless warranted as the calibration reference will be lost.

The instrument is ready for service.

TO CHANGE SWITCH SETTINGS

The instrument may be fitted with one or two micro switches and each switch is field adjustable independently. Full range of adjustment covers approximately 1/2" of travel. To move switches, loosen the lock screw and move the switch to approximate new position and retighten lock screw. Check for activation point. Repeat as required until new setting has been reached.

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