

# TP30

## PRESSURE SWITCH FOR ACTIVATION AND COMPRESSED AIR CONTROL

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### 1.1 DESCRIPTION

TP30 is a pressure transducer with contact. The switching point of the contact is adjustable by means of a knob within the regulation field indicated. The exit contact can be used as: NO, NC or SPDT. (See electrical connections on the next page).

In the standard application, TP30 is used in connection with sequencers of our range which control the solenoid valves with option D5a and/or B6-TP30 (option on demand) for PRESSURE CONTROL IN THE TANK and SOLENOID VALVE OPENING TEST.



Code: TP30

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GENERIC DOCUMENTATION. THE SPECIFIC DOCUMENTATION IS ATTACHED TO THE SEQUENCER

## 2.1 TYPE OF FAILURE DETECTED BY TP30

1. Electric failure (stop of the electric circuit from the sequencer to the solenoid valve, lack of electric impulse control from the sequencer)
2. Mechanical failure (any obstacle of the solenoid valve opening as for example frost, rust on mechanical parts of the solenoid valve.
3. Pneumatic failure (solenoid valve's membrane broken, air tube damaged, blocked or faulty. Lack of compressed air).

## 3.1 SOLENOID OPENING TEST

This application allows to check if the activation of the solenoid driven by the sequencer has occurred.

When a solenoid is activated in the tank of the compressed air connected to it, a drop of pressure happens. This drop switches the contact of TP30 sending the information to the sequencer that controls the solenoids.

Comparing the impulse generated by TP30 with the one of the solenoid activation, it is possible to establish with certainty the real solenoid valve's opening.

If TP30 does not send the reply that the shot happened after the solenoid valve command, the sequencer activates a double alarm:

- a) Visual with the detection of the number of the faulty solenoid valve.
- b) Relay alarm with contact available in terminals.

The continuous monitoring of the blowing system allows the immediate detection of faulty solenoid valves as written above.

For further details see option B6-TP30 description attached to the USER MANUAL of the sequencer.

## 4.1 PRESSURE CONTROL IN THE TANK

This application provides the information of compressed air in the tank with pressure above the set value by means of the knob positioned on TP30.

Connecting the output contact coming from TP30 to the sequencer it is possible to establish a double alarm:

- a) Visual alarm with the information of lack of compressed air.
- b) Relay alarm with contact available in terminals.

For further details see D5a option description attached to the USER MANUAL of the sequencer.

## 5.1 INSTALLATION AND ADJUSTMENT

For a proper operating, in particular in case of use as control if a solenoid valve has been activated, TP30 must be mounted in the opposite point of the inlet of the compressed air in the tank as indicated in the picture on page 1.

The installation in a different position of the one indicated can cause a faulty operating.

For TP30 calibration, proceed as indicated below:

1. Fix TP30 on the tank in the point indicated.
2. Bring the pressure of the compressed air at the minimum operating value agreed for the plant.
3. Connect a tester at TP30 terminals 1 and 2 to monitor the condition of the output contact.
4. Adjust TP30 knob until the contact switches from closed to open.
5. Block the regulation knob working on the screw positioned on the knob by means of the key provided.

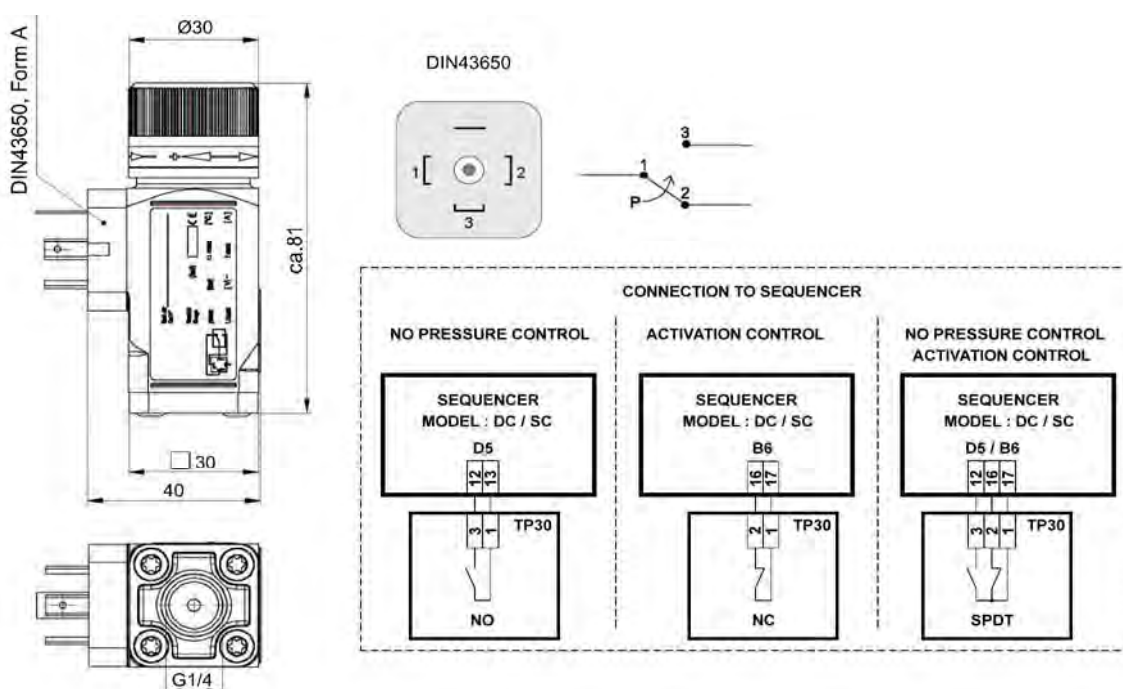


**We reserve the right to make any change without notice.**

## 6.1 TECHNICAL FEATURES

Max Pressure	20 bar
Adjustment range	0.5 ÷ 8 bar
Output signal	Micro switch SPDT (28VDC-4A/230VAC-3A)
Operating temperature	-20 ÷ +80 °C
Protection degree	IP65
Electrical connection	DIN 436650
Process connection	G1/4" gas female
Ohmic load	6 A @ 250 VAC - 3 A @ 24 VDC
Inductive load	1 A @ 250 VAC - 1 A @ 24 VDC

## 7.1 INSTALLATION AND ADJUSTMENT



## 8.1 WARRANTY

The warranty lasts 2 years. The company will replace any defective electronic component, exclusively at our laboratory, unless otherwise agreed, upon the Company's prior consent.

### WARRANTY EXCLUSION

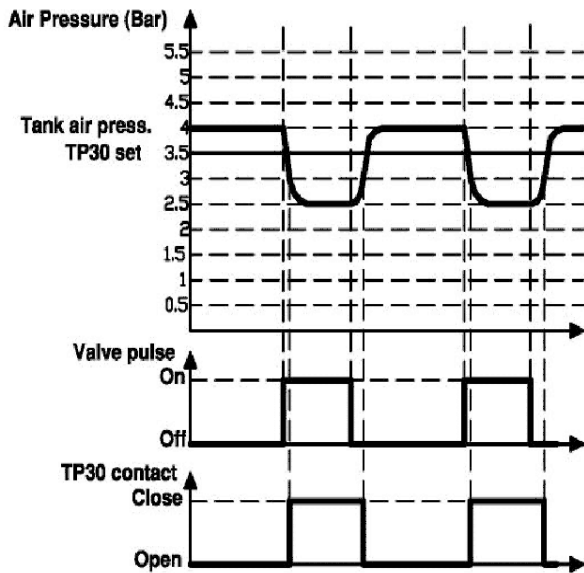
The warranty is not valid in case of:

- 1) Tampering or unauthorized repairs.
- 2) Wrong use of the device, not in compliance with technical data.
- 3) Wrong electrical wiring.
- 4) Inobservance of the installation rules.
- 5) Use of the device, not in compliance with CE rules.
- 6) Atmospheric events (Lightning, electrostatic discharge), Overvoltage.

### EXAMPLE 1: TP30 CORRECT OPERATING

For correct operating of TP30 it has to be set at pressure level a little bit less than the air pressure inside the tank. In the example the air pressure in the tank is 4 bar and the TP30 is set at 3.5 bar. (See page 2 of the manual)

When the electrovalve is activated the air pressure in the tank drop and if the pressure drop become minimum 0.5 bar under the set level in TP30, the output contact of TP30 change from open to close. At the end of pulse duration when the electrovalve switch Off the air pressure in the tank is restored and the TP30 output contact change from close to open.



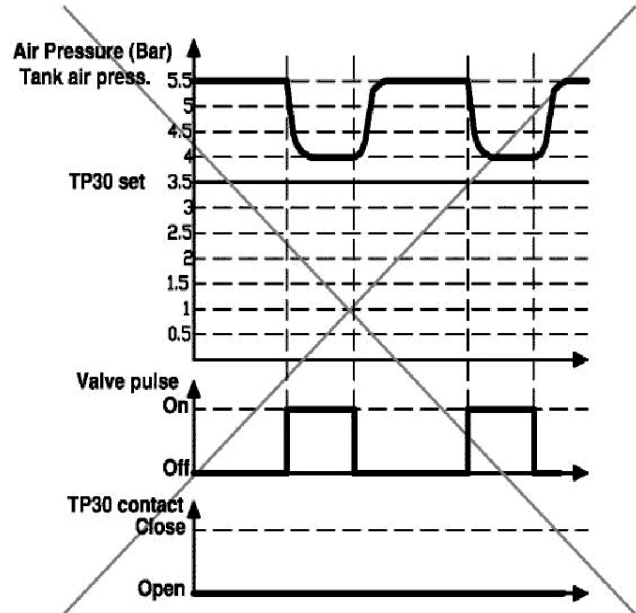
### EXAMPLE 2: TP30 WRONG OPERATING

When there is a big difference between air pressure in the tank and the set value of TP30, it could be operate in wrong way and an alarm of no activation of the electrovalve could occur.

In the example the air pressure in the tank is 5.5 bar and TP30 is set to 3.5 bar.

When the electrovalve is activated the air pressure drop inside the tank does not reach a pressure value less than 0.5 bar of the TP30 set value.

In this case the status of the TP30 output contact does not change and an alarm occur in the device connected to TP30.



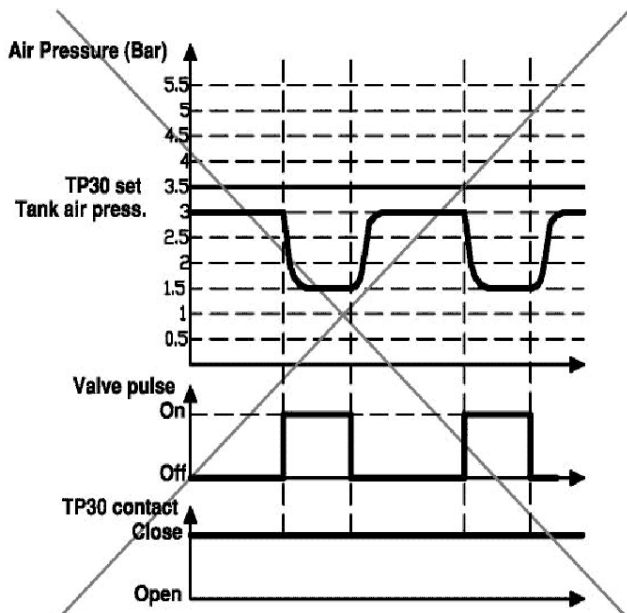
### EXAMPLE 3 :TP30 WRONG OPERATING

If the air pressure in the tank is less than TP30 set value it operate in wrong way.

In the example air pressure in the tank is 3 bar and TP30 set is 3.5 bar.

When the electrovalve is activated the air pressure drop inside the tank does not cause any variation of the output contact status of TP30 because it remain always under the TP30 set.

An alarm occur in the device connected to TP30.



### EXAMPLE 4: TP30 WRONG OPERATING

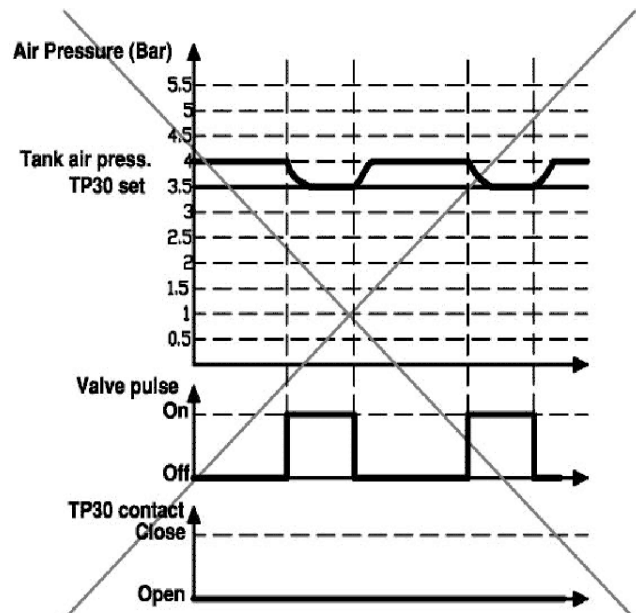
In the example below TP30 is set in correct way at pressure value a little bit less than operating air pressure in the tank.

In the example the air pressure in the tank is 3.5 bar and TP30 is set to 3.5 bar.

When the electrovalve is activated the air pressure drop inside the tank does not reach a pressure value less than 0.5 bar of the TP30 set value.

In this case the status of the TP30 output contact does not change and an alarm could be occur in the device connected to TP30.

This situation could be caused by TP30 mounted in wrong position (see picture in the manual) or by plant design.



**EG-Konformitätserklärung  
Baureihe PDS**

Wir erklären in alleiniger Verantwortung,  
dass die mit CE gekennzeichneten  
Produkte

**Typ: PDS**

**Membrandruckschalter SW30**

Gemäß gültigem Datenblatt: 90132

Die grundlegenden Schutzanforderungen  
der folgenden Richtlinie(n) erfüllen:

2014/35/EU (NSR)  
2011/65/EU (RoHS)

Die Geräte wurden entsprechend den  
folgenden Normen geprüft:

- EN 60947-1:2007 + A1:2011 + A2:2014  
- EN 60947-5-1:2017 + AC:2020-05  
- EN IEC 63000:2018

**EC-Declaration of Conformity  
model PDS**

We declare under our sole responsibility  
that the CE marked products

**Model: PDS**

**Membrane Pressure Switch AF30**

According to the valid data sheet: 90133

Are in conformity with the essential  
protection requirements of the directive(s)

2014/35/EU (LVD)  
2011/65/EU

The devices have been tested according to  
the following standards:

- EN 60947-1:2007 + A1:2011 + A2:2014  
- EN 60947-5-1:2017 + AC:2020-05  
- EN IEC 63000:2018

Rozzano, 07.02.2023

  
**Giulio Fusi**  
**General Manager**



**Excellence in Fluid Handling**

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## Declaration of Conformity acc. to EU directive RoHS

2011/65/EU (RoHS)2 inkl. Richtline 2015/863

**Mechanical Pressure Switch:**

**Models: PDL, VDL, HDL, FDL, CDL, PDC, VDC, HDC, FDC, PDS, VDS, HDS**

According to Annex II of the RoHS Directive, the following substances may not be presene in electrical equipment and its components as such or above the threshold in homogeneous material:

Lead [0,1%]	Mercury [0,1%]
Cadmium [0,01%]	Hexavalent chromium [0,1%]
Polybrominated bisphenyls (PBB) [0,1%]	Polybrominated diphenyl ethers (PBDE) [0,1%]
Di(2-ethylhexyl) phthalate (DEHP) [0,1%]	Butylbenzylphthalate (BBP) [0,1%]
Dibutylphthalate (DBP) [0,1%]	Diisobutylphthalate (DIBP) [0,1%]

**We confirm the compliance of our products with the listed substance restrictions according to RoHS Directive Annex II**

**According to annex 1-2011/65/EU, HERION&RAU classifies its products in equipment category 9 and 11**

For individual products, the following exceptions according to Annex III of the Directive apply:

- 6a.i: Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35% lead by weight
- 6c: Copper alloy containg up to 4% lead by weight

H&R components made of brass have a maximum lead content of significantly <4% and therefore comply with the directive. **As H&R complies with the legal requirements for SVHC substances due to the exemptions, a participation in the SCIP database ECHA is not planned for the time being.**

Unterzeichnet für und im Namen von / Signed for and on behalf of  
 HERION & RAU Fluidtechnik GmbH, Herrenberg, 2020-30-11

Rozzano, 07.02.2023

  
**Giulio Fusi**  
 General Manager

## UKCA-Declaration of Conformity model PDS

We declare under our sole responsibility that the

**Model: PDS**

**Membrane Pressure Switch AF30**

According to the valid data sheet: 90132; 90133

Are in conformity with the essential protection requirements of the directive(s)

Applied designated standards

**2016 No. 1101**

Electrical Equipment (Safety) Regulation

EN 60947-5-1:2017 + AC:2020-05

**2012 No. 3032**

Restriction of the Use of Certain Hazardous  
Substances in Electrical and Electric Equipment  
Regulation (RoHS)

EN IEC 63000:2018

EN 60947-1:2007 + A1:2011 + A2:2014

Unterzeichnet für und im Namen von / Signed for and on behalf of

Rozzano, 07.02.2023

  
**Giulio Fusi**  
**General Manager**