

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.



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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.



This product is in compliance with the following directives:

2014/30/UE Directive electromagnetic compatibility and 2014/35/UE low voltage directive as complying to the harmonized rules EN 60730-1:2011. 2011/65/EU ROHS Directive as complying to the harmonized European rule EN 50581:2013-05

Questo prodotto è conforme alle seguenti direttive:

Direttiva 2004/108/EC compatibilità elettromagnetica e direttiva 2014/35/UE bassa Tensione in quanto conforme alle norme Europee armonizzate EN60730-1:2011. Direttiva 2011/65/EU ROHS in quanto conforme alle norme Europee armonizzate EN 50581:2013-05

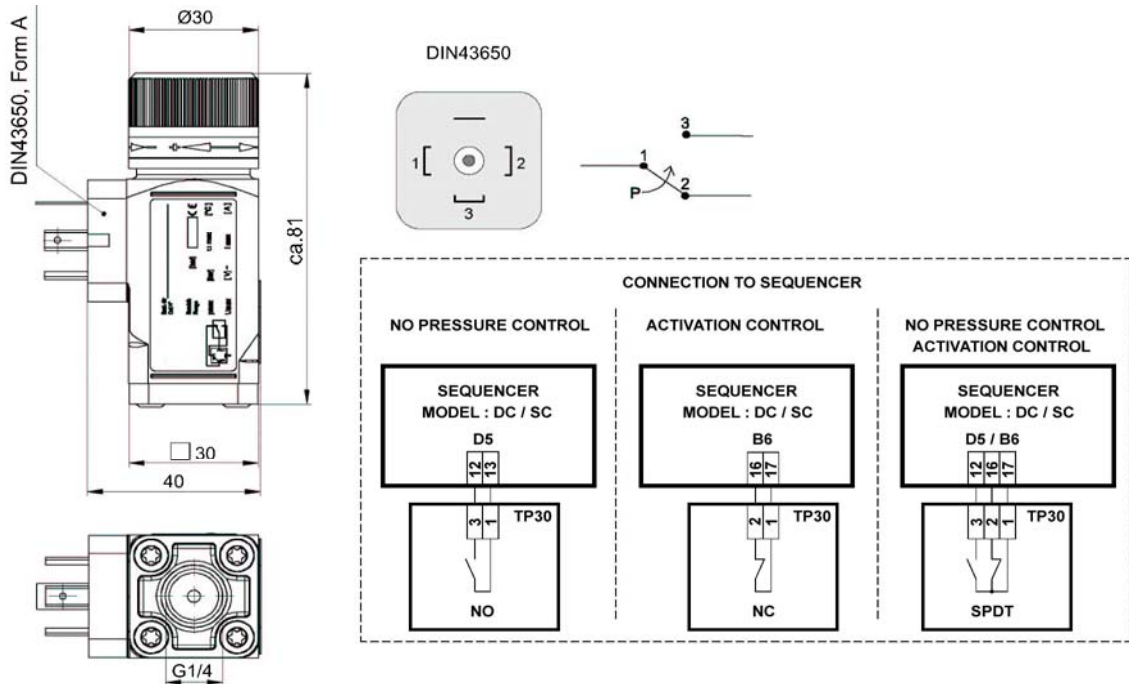


We reserve the right to make any change without notice.

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	-10 ÷ +80 °C
Protection degree	IP65
Electrical connection	DIN 436650

7.1 INSTALLATION AND ADJUSTMENT



Device in class III.

8.1 WARRANTY

The warranty lasts 4 years. The company will replace any defective electronic component, exclusively at our laboratory, unless otherwise agreed, upon the Company's prior consent.

WARRANTY EXCLUSION

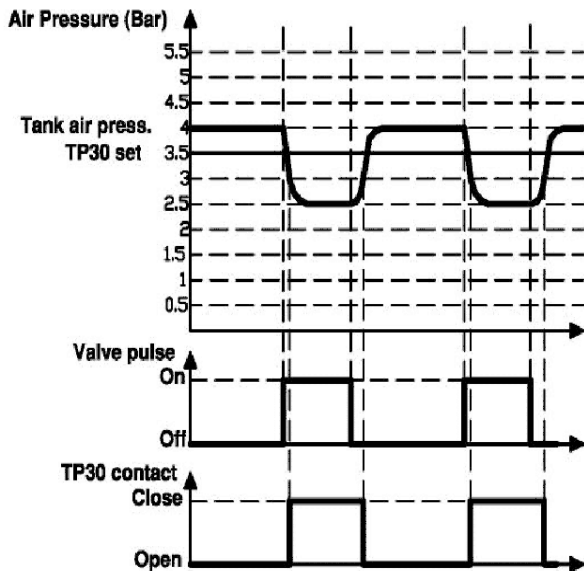
The warranty is not valid in case of:

- 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.



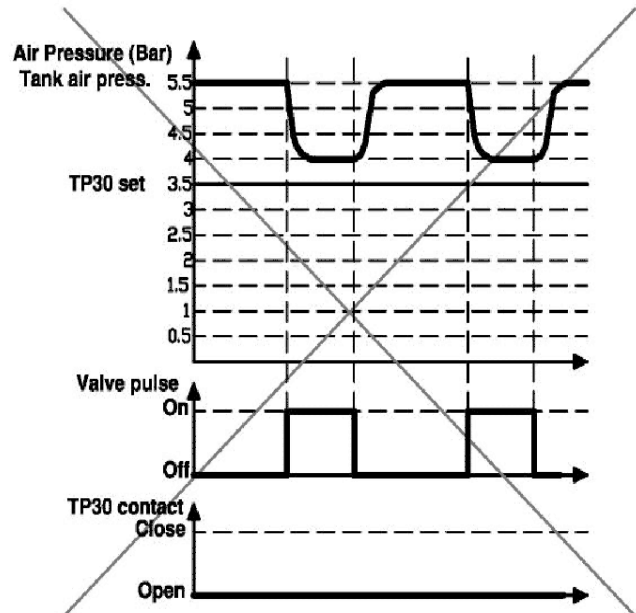
EXAMPLE 2: TP30 WRONG OPERATING

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.



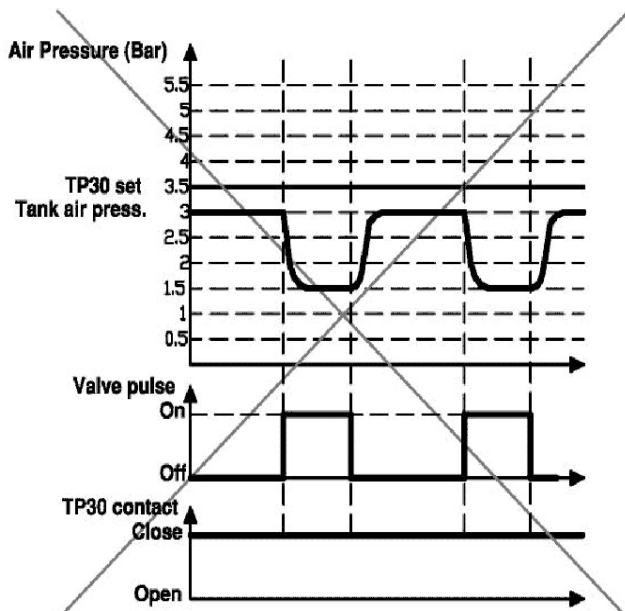
EXAMPLE 3 :TP30 WRONG OPERATING

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

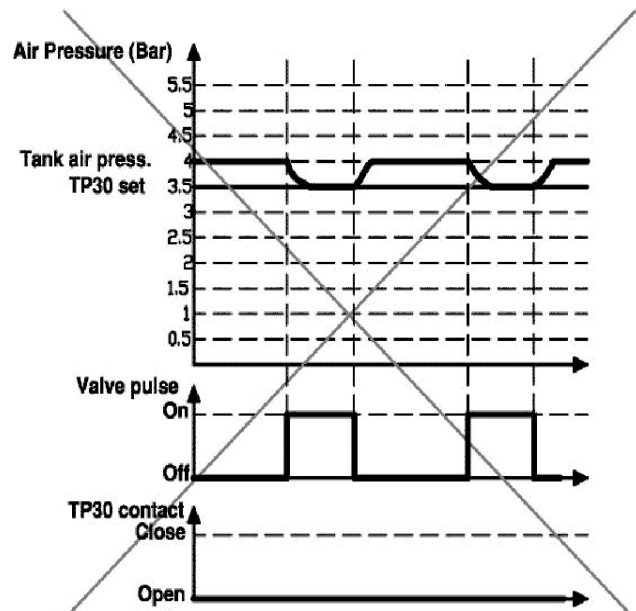
In the example below TP30 is set in correct way at pressure value a little bit less than operating air pressure in the tank.

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.



EU Declaration of Conformity (DoC)

Dichiarazione di conformità UE

Company name / Nome del fabbricante:

ESA Electronic Engineering s.r.l.

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declare that the DoC is issued under our sole responsibility and belongs to the following product:

Apparatus model / Apparecchio modello:

TP30

Product Type / Tipo di prodotto:

dP Control / Controllo dP

Serial number / Numero serie:

Object of the declaration / Oggetto della dichiarazione:

TP30

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation

L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa di armonizzazione dell'Unione

Directives 2014/30/UE, 2014/35/UE and 2011/65/UE

Direttiva 2014/30/UE, 2014/35/UE e 2011/65/UE

The following harmonised standards and technical specifications have been applied:

Riferimento alle pertinenti norme armonizzate utilizzate

Title / Titolo

Date of standard / Data di pubblicazione

EN 60730-1

2013-03

EN 50581

2013-05

Amministratore delegato / Managing director

Signed for and on behalf of / Firmato a nome e per conto di



Mesero, 01 / 06 / 2018

BELLINELLI GIANFRANCO