



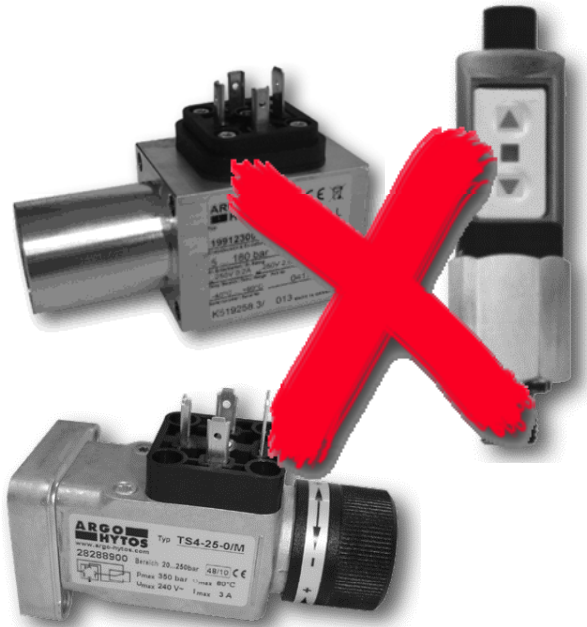
Pressure switch

TS51 & TS52

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ARGO-HYTOS FMC Product Ranges

Pressure Switches



- Pressure switch with one/two adjustable switching point.
- High long-term stability thanks to robust stainless-steel measuring cell
- High permissible pressure rating
- High vibration and shock resistance.
- Service lifetime over 50 million pressure cycles



TSE1-N, TS3, TS4

Mechanical pressure switches

TS51 & TS52

Electronical pressure switches with one or two switching out-puts

ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TSE1, TS3, TS4 → TS52 & TS51



PERFORMANCE



QUALITY



FUNCTIONALITY



DESIGN



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TSE1, TS3, TS4 → TS52 & TS51

PERFORMANCE



▶ Robust design

- Stainless-steel measuring cell with high permissible pressure rating.
- Pressure switching point adjustable by one/two setting rings allowing optimal reading.

▶ Service life

- Service lifetime more than 50 million pressure cycles.



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TSE1, TS3, TS4 → TS52 & TS51

QUALITY



- ▶ **Better working conditions**
 - Accuracy of switching point $< \pm 2.5\%$
 - Higher working temperature
- ▶ **Ideal use in accumulator charging circuits, hydraulic and pneumatic applications**
- ▶ **UL certified according to PED direction**



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TSE1, TS3, TS4 → TS52 & TS51

FUNCTIONALITY



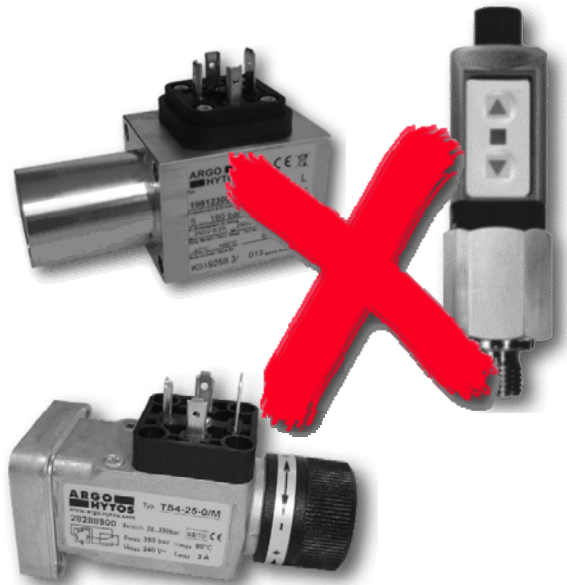
- ▶ **Parametrization**
 - manually via one/ two adjustable rings.
- ▶ **Red, green and yellow LED diode signalization**
- ▶ **Established 1% hysteresis for TS52**
- ▶ **High bursting pressure range for gaseous and liquid media**



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TSE1, TS3, TS4 → TS52 & TS51

DESIGN



- ▶ Small and convenient dimensions
- ▶ Easy parametrization by adjustable rings
- ▶ Mechanical lock prevents from unrequired manipulation of the switching point.



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TS52 & TS51 Features

- ▶ Communicates as high quality standard
- ▶ Shows TS51&TS52 as an stand alone products
- ▶ Market proven
- ▶ Customer friendly parametrization
- ▶ Competitive pricing
- ▶ 50 million pressure cycles

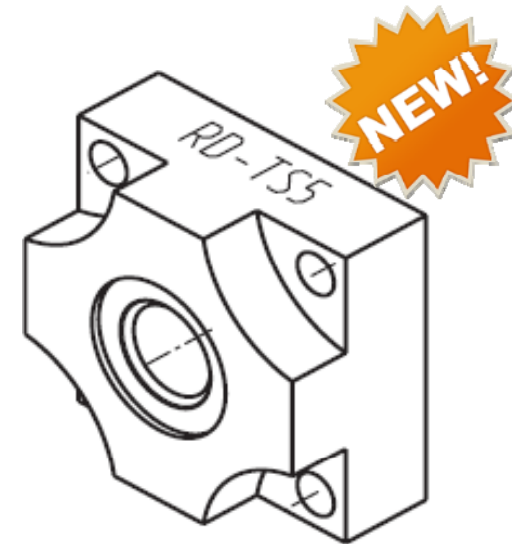


ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TS51 as TS4 substitution

▶ RD-TS5

- As a full TS4 substitution for mounting directly on MTS modular block you are able to use TS51 in combination with RD-TS5 reduction plate.



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TS52 & TS51 Datasheet



Pressure switch with one switching output

TS51



Technical Features

- › Pressure switch with an adjustable pressure switch point
- › Simple switch point setting by means of setting ring allowing optimum reading
- › High long-term stability thanks to robust stainless-steel measuring cell with high permissible pressure rating
- › Mechanical locking prevents inadvertent switch point manipulation
- › High vibration and shock resistance
- › Service-life more than 50 million pressure cycles
- › For use in hydraulics, pneumatics, air-conditioning and refrigeration
- › UL approval and certification acc. to PED direction



Functional Description

Pressure switch with a stainless-steel measuring cell and an adjustable pressure switch point. The position of adjusting ring with a scale is protected with a mechanical lock. The stainless-steel body is provided with connecting thread G 1/4 with FKM sealing ring. An electric connection is realized by four-pin connector M12 x 1. The pressure switch is suitable for industrial usage thanks to robust design, vibration and shock resistant.

Outputs: switching contact (pin 4)

Technical Data

Application				
Type		TS51-100	TS51-250	TS51-400
Measuring range	bar (PSI)	0 ... 100 (0 ... 1450)	0 ... 250 (0 ... 3630)	0 ... 400 (0 ... 5800)
Set point SP	bar (PSI)	3 ... 100 (44 ... 1450)	7.5 ... 250 (109 ... 3630)	12 ... 400 (174 ... 5800)
Hysteresis	bar (PSI)	2 (29)	5 (73)	8 (116)
Pressure range	bar (PSI)	200 (2900)	400 (5800)	600 (8700)
Min. bursting pressure	bar (PSI)	1000 (14500)	1000 (14500)	1600 (23200)
Media		Liquids		
Medium temperature	°C (°F)	-25 ... +80 (-13 ... +176)		
Ambient temperature	°C (°F)	-25 ... +80 (-13 ... +176)		
Storage temperature	°C (°F)	-40 ... +100 (-40 ... +212)		

Electrical parameters		
Supply voltage	V DC	9,6 ... 32
Current consumption	mA	< 25
Min. insulation resistance	MΩ	100 (500 V DC)
Protection class		III
IP protection		IP67
Protection		Reverse polarity protection
Outputs		
One digital output		Switching signal; PNP switcher (contacts normally open)
Max. voltage drop switching output DC	V	2
Permanent current rating of switching output DC	mA	500
Switching frequency DC	Hz	< 100
Electric protection		Pulsed short-circuit and overload protection
Accuracy / deviations		
Switch point accuracy	%	< ± 2.5 (of the final value), setting accuracy
Repeatability	%	< ± 0.5 (of the final value); with temperature fluctuations < 10 K
Characteristics deviation	%	< ± 1.5 (of the final value) Best fit straight line (BFSL) < ± 2.5 (of the final value) Limit value setting (LS)
Temperature drift per 10 K	%	< ± 0.5

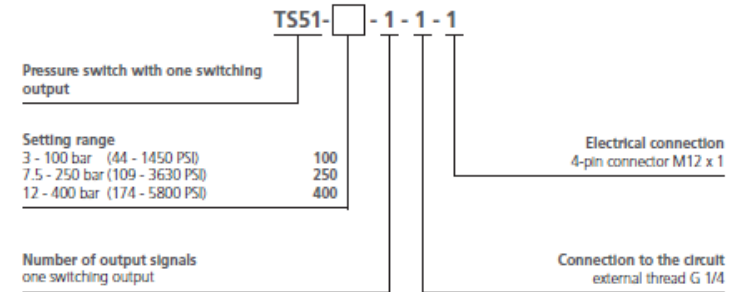
ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TS52 & TS51 Datasheet



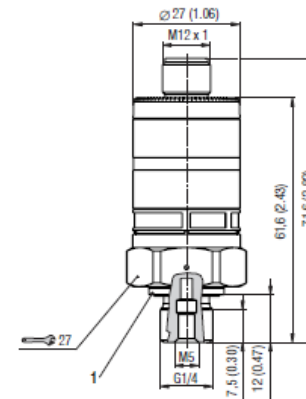
Adjusting				
Adjustment of the switch point		Setting ring with a mechanical lock		
Tests / approvals				
EMC		DIN EN 61000-4-2 ESD EN 61000-4-3 HF radiated EN 61000-4-4 Burst EN 61000-4-6 HF conducted	4 kV CD / 8 kV AD 10 V/m 2 kV 10 V	
Shock resistance		DIN IEC 68-2-27	50 g (11 ms)	
Vibration resistance		DIN IEC 68-2-6	20 g (10 ... 2000 Hz)	
MTTF	years	1030	576	1030
Mechanical parameters				
Weight	kg (lbs)	0.094 (0.21)	0.093 (0.21)	0.095 (0.21)
Materials		Stainless steel (1.4404/316L); PBT; PC; FKM		
Materials (wetted parts)		Stainless steel (1.4404/316L); FKM		
Min. pressure cycles		50 million		
Tightening torque	Nm (lbf.ft)	25 (18.4)		
Circuit connection		External thread G 1/4 (DIN EN ISO 1179-2); Internal thread M5 for restrictor		
Sealing ring		FKM (DIN 3869)		
Display, operating elements				
Display		Operation – LED green Switching status – LED yellow		
Electrical connection				
Connector		4-pin, M12 x 1		

Ordering Code



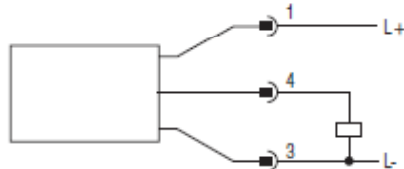
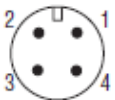
Dimensions in millimeters (in)

TS51



1 – sealing ring

4-pin connector
M12 x 1



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: TS52 & TS51 - Key features

- ▶ Over 50 million pressure cycles guaranteed
- ▶ UL certified
- ▶ High bursting pressure range
- ▶ Better accuracy of switching point
- ▶ Established 1% hysteresis
 - IP67
 - Standard industrial applications
 - Single purpose machines
 - Process technology





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