



Pressure Switch

TSE3-D

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ARGO-HYTOS FMC Product Ranges

Pressure Switches



- Suitable for indoor and outdoor applications
- Digital display indicating actual system pressure
- Rotating body for optimal position
- Two switching outputs, 1 as IO-link, 1 as a analogue I/U output
- Long-term stability due high overload protection
- High vibration and shock resistance
- UL approval and cert. According to PED direction

DNV-GL
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TSE2-D

Electronical with display
w/o IO-Link parametrization

TSE3-D

Electronical with display
with IO-Link parametrization

ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: from TSE2-D to TSE3-D



PERFORMANCE

QUALITY

FUNCTIONALITY

DESIGN



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: from TSE2-D to TSE3-D



PERFORMANCE



- ▶ **Robust design**
 - Stainless-steel body and fixed type bushing pretend against cracking of the display housing due rotating
 - Easy manual setting due smart functions such as red/green display for monitoring switching acceptable ranges
- ▶ **Long-term stability**
 - High overload protection
 - Monitoring cycles via IO-Link software (PdM)



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: from TSE2-D to TSE3-D



QUALITY



- ▶ **Extended life-cycle**
 - 100,000,000 pressure cycles guarantee
- ▶ **Better working conditions**
 - Accuracy of switching point $< \pm 0.4 \%$
 - Higher working temperature
 - Lower response time $< 1.5 \text{ ms}$
- ▶ **Pressure range up to 400bar**



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: from TSE2-D to TSE3-D



FUNCTIONALITY



- ▶ **Parametrization via IO-Link**
 - or manually with buttons
- ▶ **Red/Green invertable display**
 - Nice monitoring of un/acceptable switching points by changing color.
- ▶ **Alphanumeric 4 digit display**
 - Also enriched by total of 5 signalization LED lights



ARGO-HYTOS FMC Product Ranges

Electronical pressure switch: from TSE2-D to TSE3-D



DESIGN



- ▶ **Display with 180° rotation**
 - Allows a perfect view on the display above or below the eye level
 - 2 colors to better define desired value
- ▶ **Easy parametrization via manual buttons**
- ▶ **Rotatable on the bottom by 345°**



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Electronical pressure switch: TSE3-D features

- ▶ Communicates as high quality standard
- ▶ Shows TSE3-D as an stand alone product
- ▶ Market proven
- ▶ Customer friendly parametrization
- ▶ Competitive pricing
- ▶ IO-Link communication
- ▶ 100 mio. Cycles guarantee



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Electronical pressure switch: TSE3-D datasheet



ARGO
HYTOS

Electronic pressure switch / sensor with two outputs

TSE3-D

p_{max} up to 400 bar (5800 PSI)



Technical Features

- › Two switching outputs, one programmable as IO-Link, and one as a analogue current / voltage output
- › Red/green display for visualisation of the un/acceptable range
- › Rotating body for optimal position of connector
- › Long-term stability thanks to high overload protection
- › Robust design and stainless-steel body for use in harsh industrial environments
- › High vibration and shock resistance
- › UL approval and certification acc. to PED direction

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Functional Description

Programmable pressure sensor with a metallic thin film measuring cell for measuring fluid system pressure, e.g. in hydraulic circuits, and indication of reaching the adjusted pressure value. 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 4-digit display and programming buttons are on the top surface. The sensor is suitable for industrial usage thanks to robust design, vibration and shock resisted.

Outputs:

OUT1 (pin 4): switching signal for indication of adjusted value of system pressure or
Communication via IO-Link (COM2)

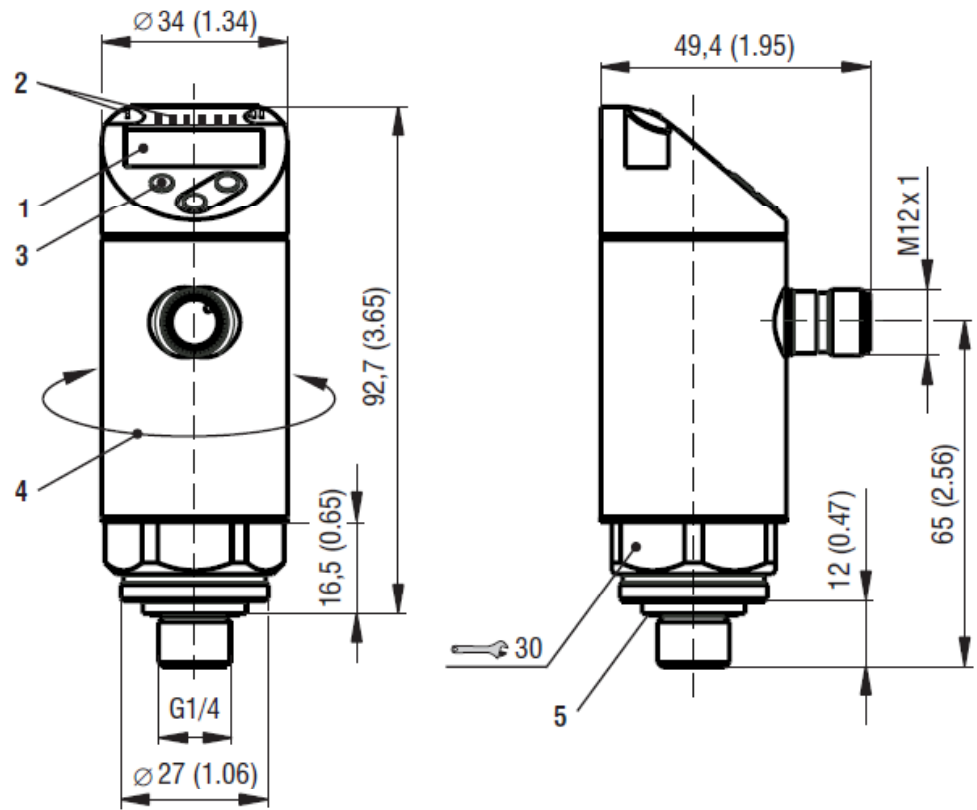
OUT2 (pin 2): switching signal for indication of adjusted value of system pressure or
analogue signal 4 ... 20 mA / 0 ... 10 V

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Electronical pressure switch: TSE3-D datasheet



Dimensions in millimeters (inches)

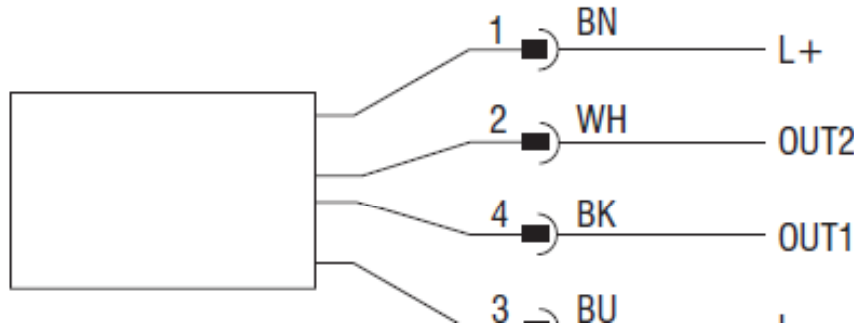
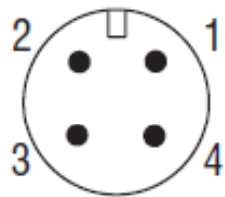


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Electronical pressure switch: TSE3 datasheet



4-pin connector
M12 x 1



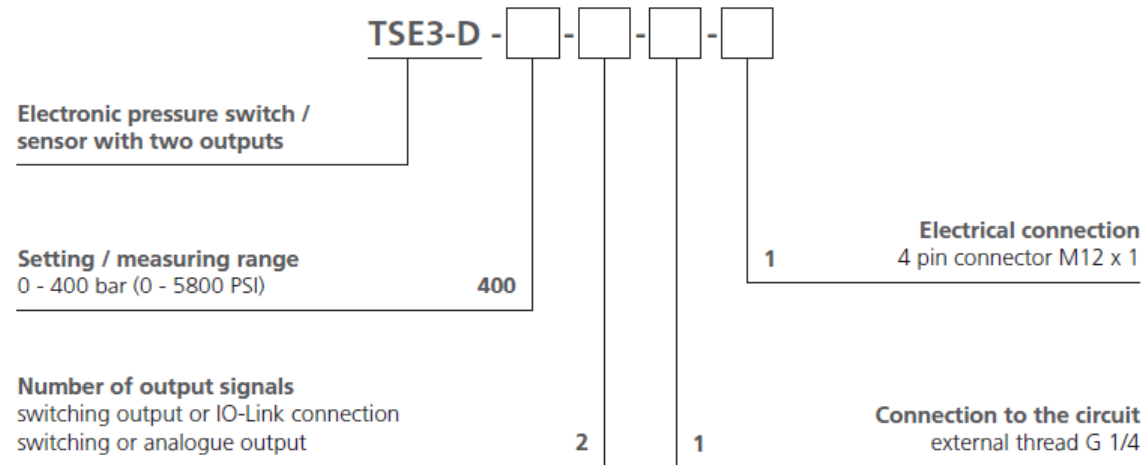
Output OUT1: switching output

Output OUT2: switching output
analogue output

Core colours:
1 - BN = brown
2 - WH = white
3 - BU = blue
4 - BK = black



Ordering Code



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Electronical pressure switch: TSE3-D New Application vs. Key features

- ▶ Integrated Key Pad
 - IP65/67
 - Machine tool working chamber
 - Mobile high torque shredder
- ▶ IO-Link communication
 - Reduction of wiring
 - Easy monitoring, configuration and data availability
 - Simple device replacement



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Electronical pressure switch: TSE3-D comparison


**ARGO
HYTOS**
HYDAC
HERION


Housing	stainless-stell	stainless-stell	polyamid	stainless-stell
Seals	FKM	FKM	FPM	FPM
Operating elements	3 push buttons	3 push buttons	3 sealed buttons	2 sealed buttons
Protection	IP67	IP67	IP65	IP67
Dimensions	92,7x49,4mm	91,5x40,4mm	102x40mm	62x27mm
Accuracy	≤ ± 0,4 %	≤ ± 1 %	≤ 1%	≤ 1% (at room temp.)
Temperature ranges	-	-	-	-
medium	-25 .. +80 °C	-10 .. +70 °C	unknown	unknown
ambient	-25 .. +80 °C	-25 .. +80 °C	-20...+70°C	-25...+85°C
storage	-40...+100°C	-40 .. +80 °C	unknown	-40...+80°C
Display	4-digit; 7 segment R/G	4-digit; 7 segment R/G	4-digit; 7 segment R/G	4-digit; 7 segment R/G
Analogue output	4...20mA ; 0...10V + Frequency output <500Hz	4...20mA ; 0...10V	4...20mA ; 0...10V	2x PNP transistor (250mA per output)
IO-Link	YES	YES	YES	NO
Shock resistance	≤ 50 g	≤ 50 g	unknown	≤ 50 g
Vibration resistance	≤ 20 g	≤ 10 g	unknown	≤ 10 g
Connection	M12x1	M12x1	M12x1	M12X1
Cycles guaranteed	100 mio.	unknown	100 mio.	unknown



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