

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

**HIDROMA
SYSTEMS**

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

Pressure Switches for all Applications

**„Standard“ Pressure
Switch DS-307(302)**



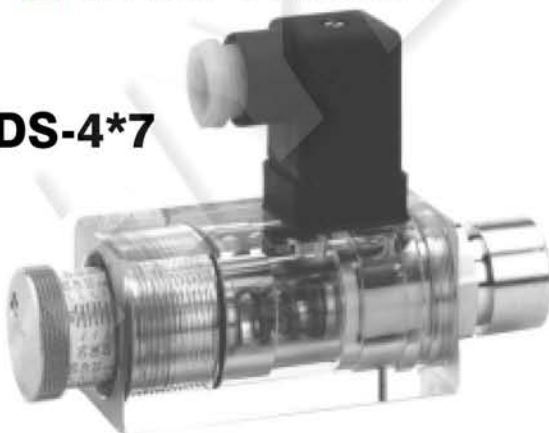
**„The New“ Pressure
Switch DS-507(502)**



see Catalogue 1.10/E

**Pressure Switch with
2 Micro Switches**

DS-4*7



see Catalogue 1.14/E

**„The little one“
□ 30**

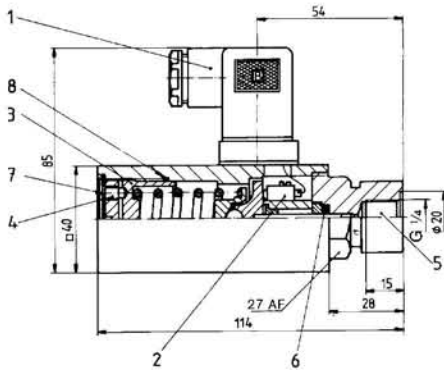
DS-117



see Catalogue 1.16/E

General Data

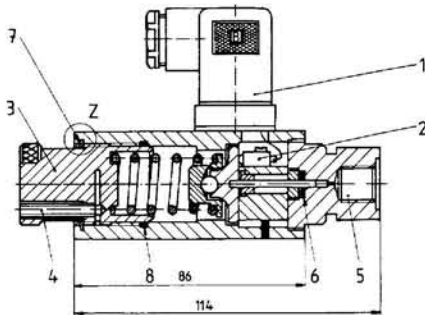
DS-307 or DS-302



8	1	O-Ring	DS-307 DS-302
7	1	Snap ring	
6	1	Set of seals (non-sticking, non-slipping)	
5	1	Connection G 1/4-female	
4	1	Locking screw	
3	1	Adjustable screw top	
2	1	Micro switch (single-pole double-throw)	
1	1	Appliance inlet - DIN 43650	
Item	No.	Description	

DS-307/V2 or DS-302/V2

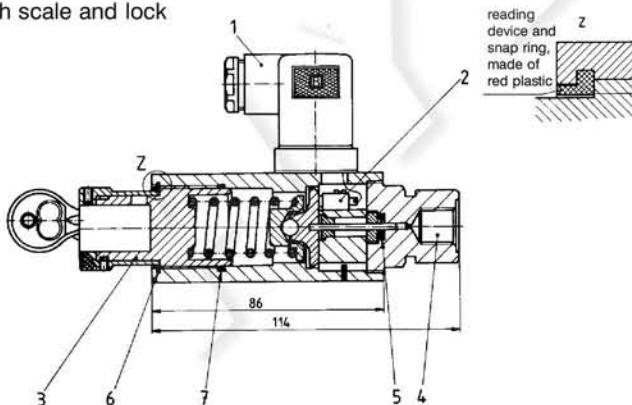
with scale



8	1	O-Ring	DS-307/V2 DS-302/V2
7	1	Reading device and snap ring	
6	1	Set of seals (non-sticking, non-slipping)	
5	1	Connection G 1/4-female	
4	1	Locking screw	
3	1	Knurled knob with scale	
2	1	Micro switch (single-pole double-throw)	
1	1	Appliance inlet - DIN 43650	
Item	No.	Description	

DS-307/V2/AS-H2 or DS-302/V2/AS-H2

with scale and lock



7	1	O-Ring	DS-307 / V2/AS-H2
6	1	Reading device and snap ring	
5	1	Set of seals (non-sticking, non-slipping)	
4	1	Connection G 1/4-female	
3	1	Knurled knob with scale and lock (lock E 10 H2)	
2	1	Micro switch (single-pole double-throw)	
1	1	Appliance inlet - DIN 43650	
			DS-302 / V2/AS-H2
Item	No.	Description	

Description DS-307 / DS-302

These models are piston-spring type pressure switches. With pressure at zero the micro-switch remains pressed and will only be released when the adjusted switching pressure has been reached.

In case of higher pressure the ram works against the spring. The piston pressure will then depend on the initial spring force. Adjustment by turning the screw top (or knurled knob) which can be fixed with a locking screw. The complete adjusting travel is approx. 9 mm.

Pressure Switch, Characteristics

DS-307/302	piston diameter mm					
	ø 3	ø 4	ø 5	ø 6		
1. General						
Design	spring-loaded piston, because of mechanical turn it is no longer possible to get the spring screwed on "block"					
Connection	thread G ¼ female or subplate, pitch circle ø 44 mm					
Adjustment	adjustable screw top or knurled knob					
Safety	locking screw or lock (E 10 H2 [Type AS])					
Mounting position	variable					
2. Hydraulic data						
Switching pressure range	50-600 bar	50-420 bar	20-350 bar	40-240 bar	20-150 bar	10-100 bar 5-55 bar
Switching accuracy	variations of less than 1%					
Ambient temperature	- 40 °C up to + 90 °C					
Fluid	oil, oil-in-water-emulsion					
3. Electric data						
Switch	electro-mechanical double-throw switch					
Current	AC - DC current					
Protection according to DIN 40050	IP 65					
Electrical connection	appliance inlet according to DIN 43650 (PG 11, on request PG 9 without additional price)					
4. Features						
Housing	Aluminium					
Standard body	Brass					
Switching travel	0,5 mm - reducing wear of seal and ram to a minimum					
Subplates	valve mounting NG 6 and NG 10 (only for subplate connection Type DS-307/F or DS-302/F)					
Rights of alteration reserved in sense of technical development !						

Switching Capacity

Standard Contact: Gold on Silver
on request: Silver

Standard value of permissible load of gold surface of standard contact

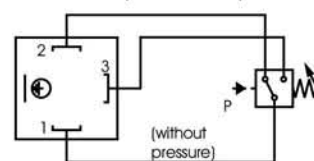
Conducting capacity should not be bigger than 0,12 VA.
Current 400 mA.
Voltage 30 V.

Standard value of switching cycle		U (V)	resistive load (A)	bulb load metallic filam. (A)	inductive load (A)
switching cycles					
AC	5 x 10 ⁵	220	10	0,5	5
	1 x 10 ⁶				
DC	5 x 10 ³	< 30	10	2	3
	1 x 10 ⁶				

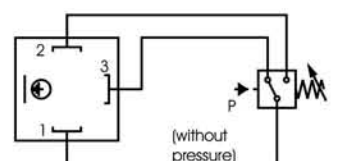
Electrical Connection

Symbols

DS-307 (Standard)



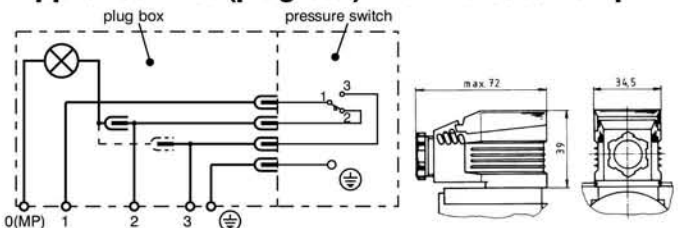
DS-302



connection:
NCC: clamp 1-2
NOC: clamp 1-3

connection:
NCC: clamp 1-3
NOC: clamp 1-2

Appliance inlet (plug box) with indicator lamp



Utilization of the insert for indicator lamp only in connection with the plug box (see graphical symbol above). The indicator lamp can be connected to clamp 2 or clamp 3 on request. The clamp connection "MP" is directly provided on the sheet bar of the insert for indicator lamp.

How to order DS-307 etc.

DS-307 / / - /

Standard **DS-307, DS-302**

additional notes (indicated by bar)

- F** = flange mounting
- F/P** = pressure switch with integrated 90°-subplate (see page 6)
- V2** = scale and knurled knob
- AS-H2** = with lock E10 H2
- SCH** = panel mounting
- PO** = lead seal (not for version with scale)
- L-MP 24** = 4-pole appliance inlet 24 V-DC
- L-MP 220** = 4-pole appliance inlet 220 V-AC
- LED-34** = plug with indicating function DIN 43 650
- MS** = brass housing
- SS** = special sealing (low function) only for the following pressure ranges:
5- 55 bar 10-100 bar
40-240 bar 20-350 bar

***= insert pressure range
e.g. 055 (5-55 bar)

Pressure set at factory:
standard pressure increasing,
on request decreasing.

- S** = Viton
- G** = 2 tapped holes (see page 7)
- B** = 2 mounting holes (see page 7)
- SL** = silver contacts

pressure ranges:	p _{max.} standard	p _{max.} special sealing SS
55 = 5- 55 bar	300 bar	200 bar
100 = 10-100 bar	400 bar	200 bar
150 = 20-150 bar	500 bar	-
240 = 40-240 bar	500 bar	400 bar
350 = 20-350 bar	600 bar	400 bar
420 = 50-420 bar	600 bar	-
600 = 50-600 bar	800 bar	-

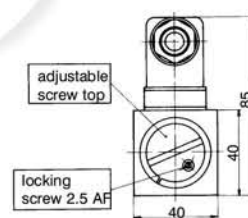
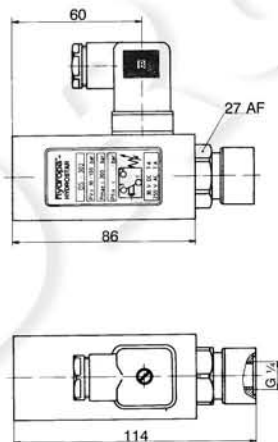
Dimensions DS-307/302

DS-307-*** or DS-302-***

Weight: 0,63 kg



standard



Limitation to avoid the turn out of the adjustable screw top by means of a snap ring.

threaded connection:
G 1/4 female

Protection IP 65

Pressure adjustment as follows:
detachment of locking screw;
increase of pressure when turning the adjustable screw top clockwise.
on request max. switching pressure set - at factory.

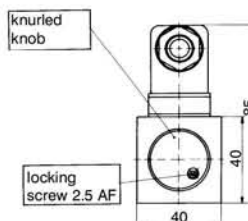
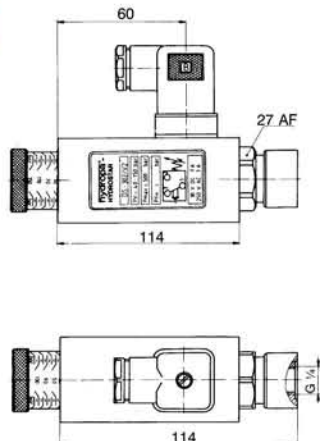
(***=pressure range)

DS-307/V2-*** or DS-302/V2-***

Weight: 0,66 kg



with scale and knurled knob ø 30 mm



Limitation to avoid the turn out of the knurled knob by means of a snap ring.

threaded connection:
G 1/4 female

Protection IP 65

Graduated ring for precise pressure adjustment; lockable by means of locking screw; the required switching point is pre-selectable when turning the knurled knob.

(***=pressure range)

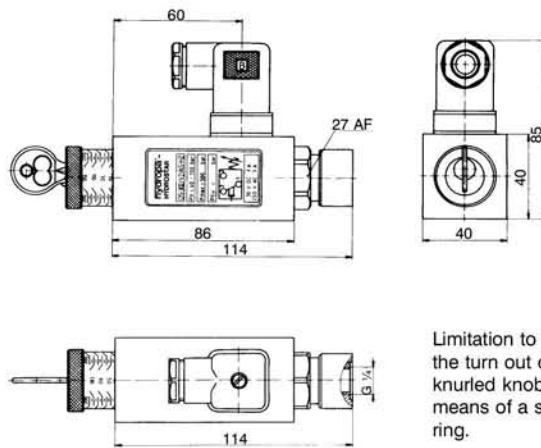
DS-307/V2/AS-H2-***

or DS-302/V2/AS-H2-***

Weight: 0,67 kg



with scale, knurled knob ø 30 mm and lock E10 H2



Limitation to avoid the turn out of the knurled knob by means of a snap ring.

threaded connection:
G 1/4 female

Protection IP 65

Pull of the key -
pressure adjustment
legible (all-round).

(***=pressure range)

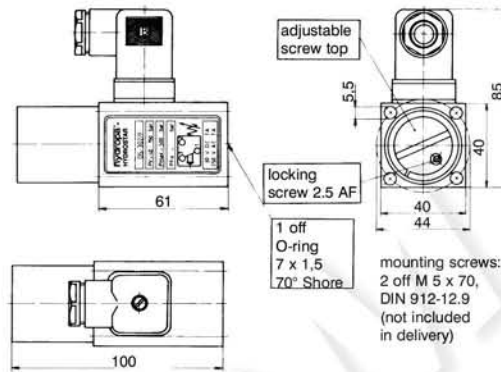
DS-307/F-***

or DS-302/F-***

Weight: 0,65 kg



subplate connection



Limitation to avoid the turn out of the adjustable screw top by means of a snap ring.

Connection:
subplate connection

Protection IP 65

Pressure adjustment as follows: detachment of locking screw; increase of pressure when turning the adjustable screw top clockwise.

On request max. switching pressure set-at factory.

(***=pressure range)

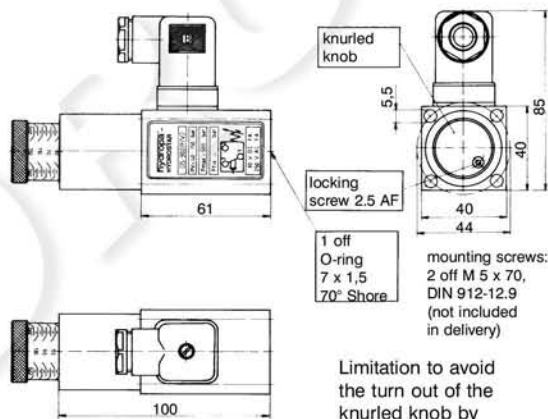
DS-307/F/V2-***

or DS-302/F/V2-***

Weight: 0,67 kg



subplate connection with scale, knurled knob ø 30 mm



Limitation to avoid the turn out of the knurled knob by means of a snap ring.

Connection:
subplate connection

Protection IP 65

Graduated ring for precise pressure adjustment; locking screw; the required switching point is pre-selectable when turning the knurled knob.

(***=pressure range)

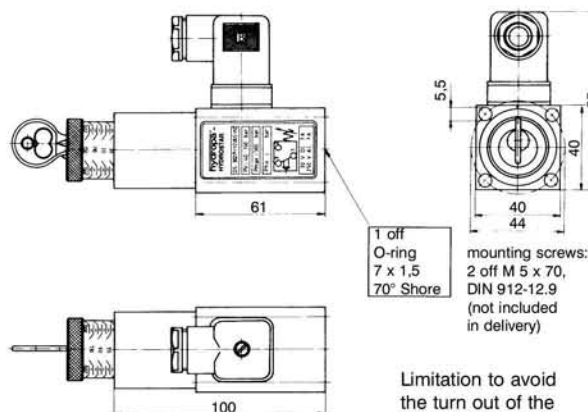
DS-307/F/V2/AS-H2-***

or DS-302/F/V2/AS-H2-***

Weight: 0,68 kg



subplate connection with scale, knurled knob ø 30 mm and lock E10 H2



Limitation to avoid the turn out of the knurled knob by means of a snap ring.

Connection:
subplate connection

Protection IP 65

lock E10 H2

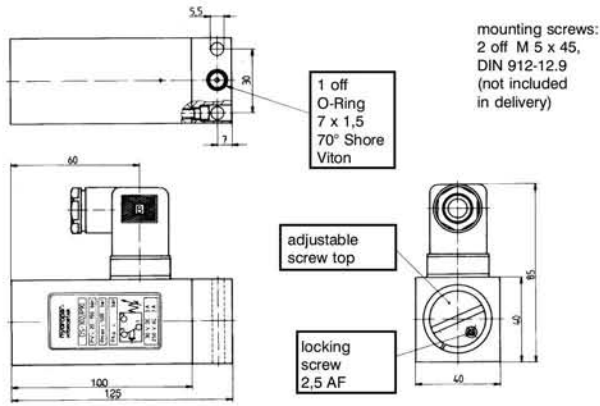
pull off the key -
pressure adjustment
legible (all-round).

(***=pressure range)

DS-307/F/P-***

or DS-302/F/P-***

Weight: 0,62 kg



Connection:
Subplate connection

Protection IP 65

Pressure adjustment as follows: detachment of locking screw; increase of pressure when turning the adjustable screw top clockwise.

On request max. switching pressure set - at factory.

(***=pressure range)

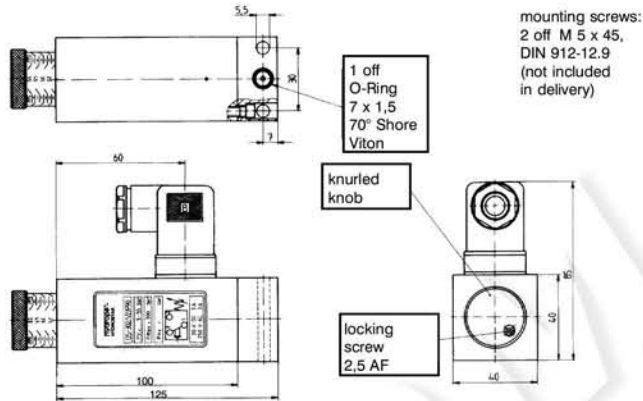
standard

Limitation to avoid the turn out of the adjustable screw top by means of a snap ring.

DS-307/F/P/V2-***

or DS-302/F/P/V2-***

Weight: 0,68 kg



Connection:
Subplate connection

Protection IP 65

graduated ring for precise pressure adjustment; lockable by means of locking screw; the required switching point is pre-selectable when turning the knurled knob.

(***=pressure range)

with scale, knurled knob \varnothing 30 mm

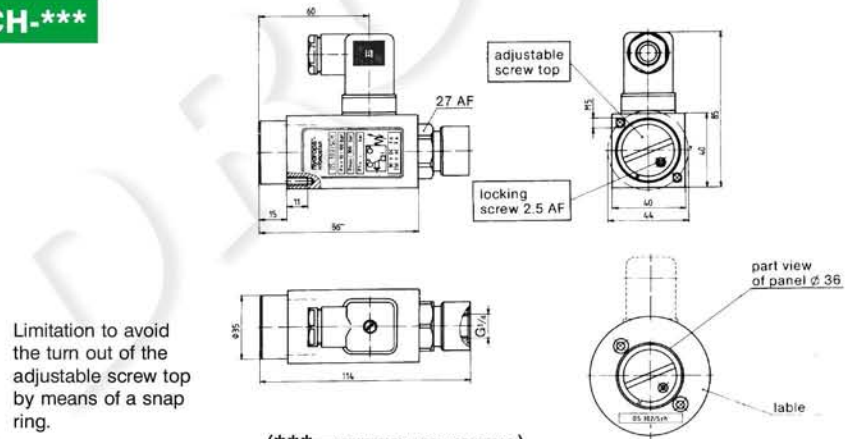
Limitation to avoid the turn out of the knurled knob by means of a snap ring.

DS-307/SCH-* or DS-302/SCH-*****

Weight: 0,62 kg



panel mounting



Limitation to avoid the turn out of the adjustable screw top by means of a snap ring.

(***=pressure range)

DS-307/SCH/V2***

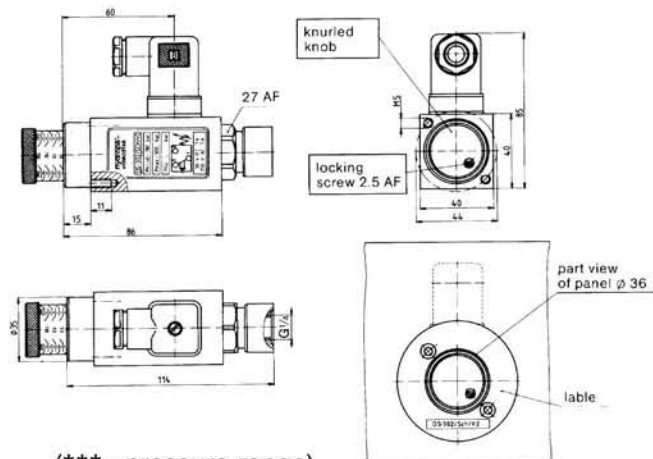
or DS-302/SCH/V2-***

Weight: 0,65 kg



panel mounting with scale, knurled knob \varnothing 30 mm

Limitation to avoid the turn out of the knurled knob by means of a snap ring.



(***=pressure range)

DS-307/SCH/V2/AS-H2-***

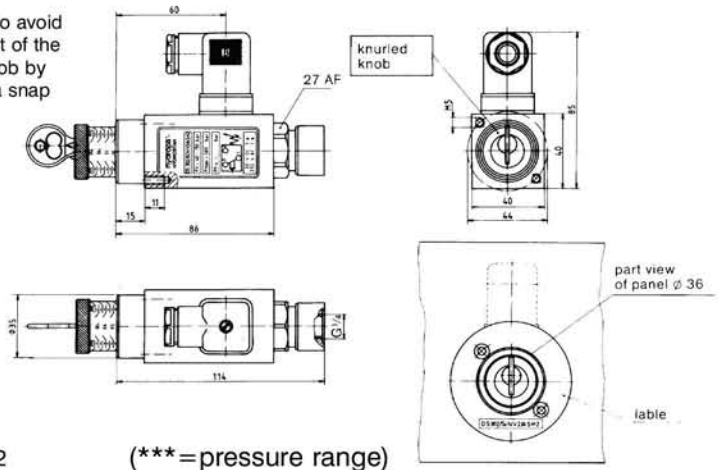
or DS-302/SCH/V2/AS-H2-***

Weight: 0,66 kg



panel mounting with scale, knurled knob \varnothing 30 mm and lock E10 H2

Limitation to avoid the turn out of the knurled knob by means of a snap ring.



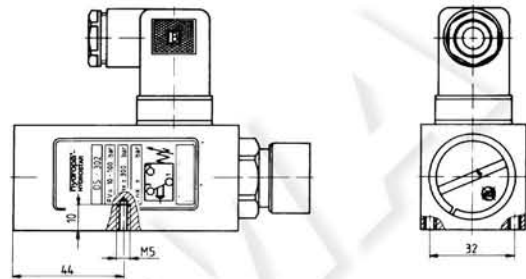
Tapped holes for pressure switches

Pressure switch mounting with tapped holes 2 x M5, 10 deep at opposite side to the appliance inlet.

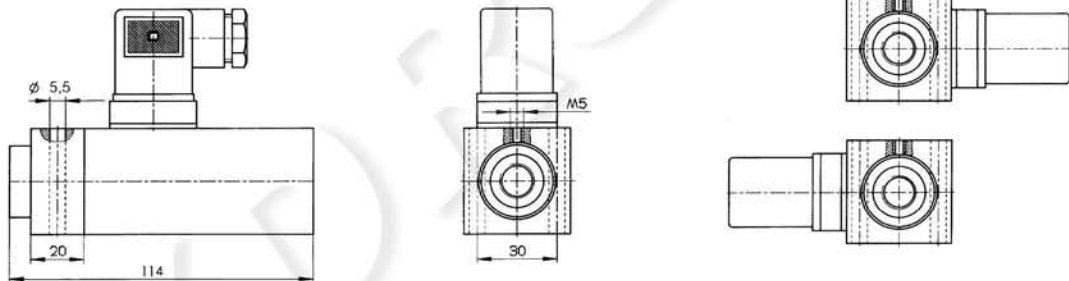
Only on request.

To be added after indication of pressure range: ***/G

Not for flange mounting pressure switches (DS-307/F or DS-302/F).



Mounting holes for pressure switches with connection thread G 1/4 female



Only on request

Plug with indicator function - LED-34



DIN 43 650

- To turn at 270°
- 45° detent
- Wiring for all voltages (12 to 220 V/AC-/DC)
- 2 off LED indicator
Green: energized
Yellow: switched (selectable)

The significant supplement

IP 65
(acc. to DIN 40050)

Hysteresis for DS-307/DS-302

1. Standard sealing:

Pressure switch Type DS-307/302: For an adjustable pressure of approximately 60-70% of the max. adjustable pressure the Hysteresis is approximately 7-12% of end value.

These values are dependent on the temperature and viscosity of working fluid.

Example:	DS-307/100	Adjusted pressure: 70 bar
	pressure range: 10-100 bar	Hysteresis: approx. 7-12 bar

2. Special sealing (low friction) type "SS"

Pressure switch Type DS-307/SS: For an adjustable pressure of approximately 60-70% of the max. adjustable pressure the Hysteresis is approximately 3-6% of end value.

These values are dependent on the temperature and viscosity of working fluid.

Example:	DS-307/SS-100	Adjusted pressure: 70 bar
	pressure range: 10-100 bar	Hysteresis: approx. 3 bar
	DS-307/SS-240	Adjusted pressure: 200 bar
	pressure range: 40-240 bar	Hysteresis: approx. 12 bar

Two Circuit Pressure Diaphragm Seal Unit

- Two Circuit Diaphragm Seal Unit with - Hydrostar measuring units

Up to 600 bar
-50°C up to + 100°C



DMH-630 R with
pressure switch
DS-307



DMH-630 R with
pressure gauge
TKF-2060



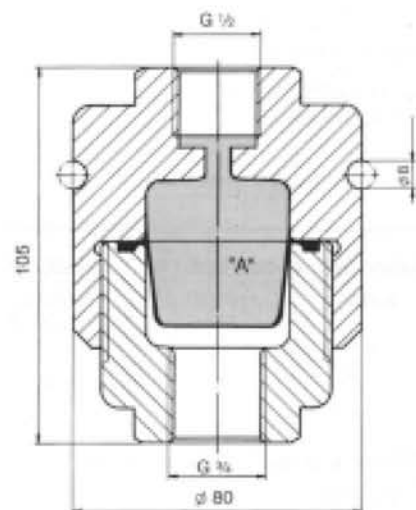
DMH-630 R with
glycerine gauge
MG 63

DMH-630 R

G 1/2 : connection
measuring unit

G 3/4 : connection
working fluid

"A" : place for
mineral oil
40 cm³

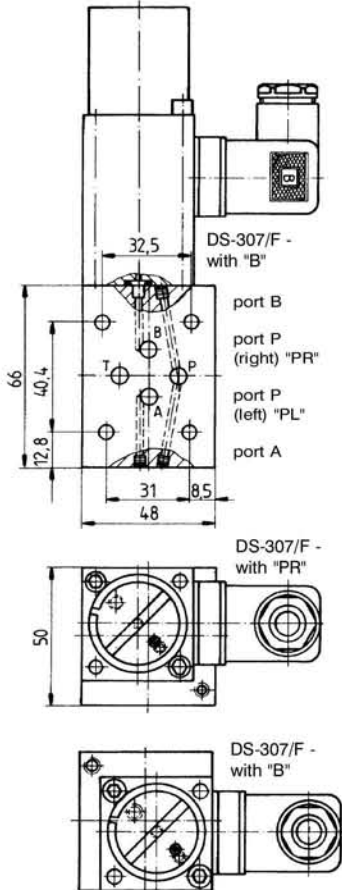


Material of Membrane:
50 NBR/253 based on
acrylonitrile butadiene
rubber useable for the
following fluids:
mineral oil, oily compressed
air, water and water-oil-
emulsion.

Subplates for compact mounting

These subplates are for direct connection of the flangeable pressure switch onto an optional port e.g. "P", "A" or "B" without drilling of additional ports. Maximum pressure: 350 bar.

NG 6-subplate PZ-6

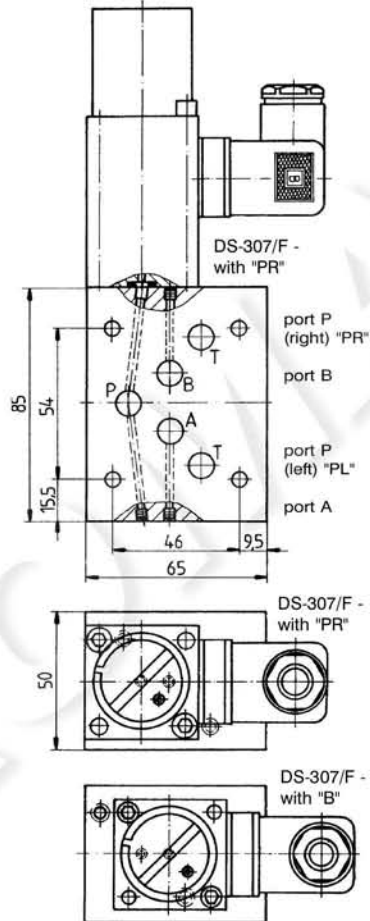


Example:
Subplate
with
pressure switch
Typ DS-307/F...
at
port "B"

Scope of delivery:

- 1 off subplate with
- 4 off O-Ring 5-612
(8.74 x 1.78)
- 3 off expander

NG 10-subplate PZ-10



Example:
Subplate
with
pressure switch
Typ DS-307/F...
at
port "PR" (right)

Scope of delivery:

- 1 off subplate with
- 5 off O-Ring 2-014
(12.42 x 1.78)
- 3 off expander

How to order

Subplates for
pressure switch connection

- 6** = NG 6 with graphical
symbol A 6-DIN 24 340
- 10** = NG 10 with graphical
symbol A 10-DIN 24 340

PZ / / /

connection in
PR = port P (right)
PL = port P (left)
A = port A
B = port B
AB = port A and B
 other combinations on request
 (e.g. PR + PL)

no indications = Perbunan-seals
S = Viton-seals

Pressure switches DS-103 and DS-104

DS-103/ES/MS-***

Weight: 1,5 kg



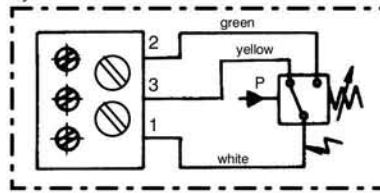
For the mining industry

Housing brass

Electrical production facilities
or machines for mines with
mine gas.

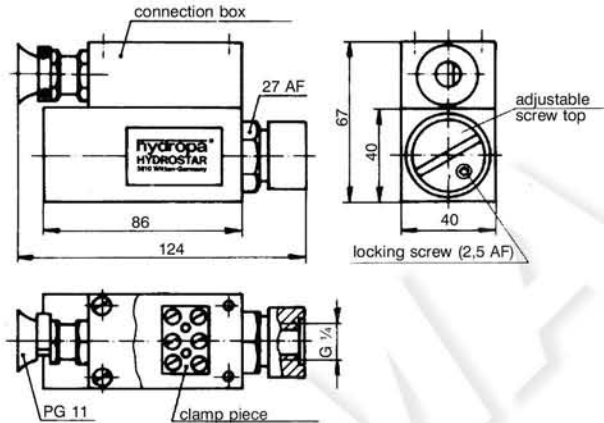
Connection box:
with 3-pole terminal board

Symbol



pressure ranges:

55	= 5- 55 bar
100	= 10-100 bar
150	= 20-150 bar
240	= 40-240 bar
350	= 20-350 bar
420	= 50-420 bar
600	= 50-600 bar



(***= pressure range)

DS-104/EX-***

Weight: 0,8 kg



Pressure switch type DS-104/EX is fitted with a special end switch from Bartec. This end switch has the approval acc. PTB no. Ex-93.C.1019 X dated 16.04.1993.

Special requirements:

The end switch must be mounted with a mechanical protection.

The cable of this electrical end switch must be fix and properly laid in order to avoid mechanical damage.

Working temperature: -25 °C up to +70 °C

NOC/NCC contact

Cable length: 4 m, longer on request

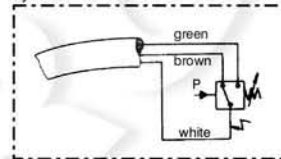
Max. electrical load:

When separate earth is done by customer the end switch can be loaded with max. AC 250 V 6.0 A.

See certificate of conformity PTB no. EX-93.C.1019 X.

End switch type 07-2501-6.

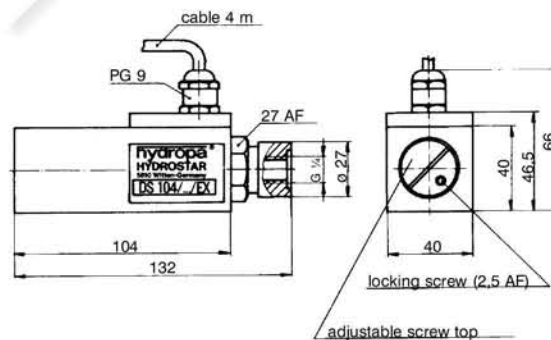
Symbol



Earthing separately
e.g. by pipeline

pressure ranges:

55	= 5- 55 bar
100	= 10-100 bar
150	= 20-150 bar
240	= 40-240 bar
350	= 20-350 bar
420	= 50-420 bar
600	= 50-600 bar



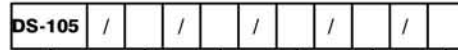
Type	Description
DS-104/EX-***	Pressure switch, explosion-proof
DS-104/EX/V2-***	with scale and knurled knob \varnothing 30 mm
DS-104/EX/V2/AS-H2-***	with scale, knurled knob \varnothing 30 mm and lock E10 H2
DS-104/EX/SCH-***	panel mounting
DS-104/EX/SCH/V2-***	panel mounting and knurled knob \varnothing 30 mm
DS-104/EX/SCH/V2/AS-H2-***	panel mounting, knurled knob \varnothing 30 mm and lock E10 H2

(***= pressure range)

Double Pressure Switch DS-105

1 fixed switching point
1 adjustable switching point

How to order



fixed switching point
(pressure drop)

max. adjustable pressure

S = Viton

X1 = standard electrical symbol

adjusted pressure at factory: standard
encreasing pressure, on request decreasing pressure

Alternating current (AC) capacity

voltage V~	resistive load A	bulb load matallic filam. A	inductive load A
125	7	0,5	5
250	7	0,5	5

Direct current (DC) capacity

voltage V~	resistive load A	bulb load matallic filam. A	inductive load A
up to 15	10	2	10
up to 30	7	2	5
up to 50	2	1	2
up to 75	1	0,5	1
up to 125	0,5	0,4	0,06
up to 250	0,25	0,2	0,03

Also valid for DS-103.

Function

This switch can be used for two different pressure adjustments

1. Low pressure safety level, preset.
2. Freely adjustable high pressure range.

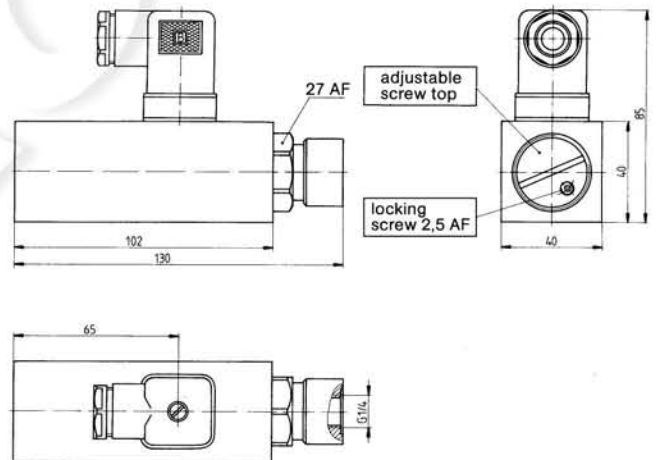
Pressure ranges:

max. pressure range adjustable	fixed pressure		Tolerances
	pressure rising	pressure falling	
15-100 bar	8 bar	5 bar	± 2 bar
30-150 bar	10 bar	7 bar	± 3 bar
50-240 bar	16 bar	11 bar	± 3 bar
100-450 bar	28 bar	11 bar	± 5 bar

DS-105/*-***

Protection: IP 54

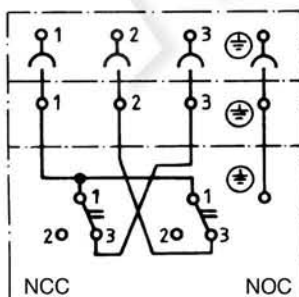
Weight: 0,68 kg



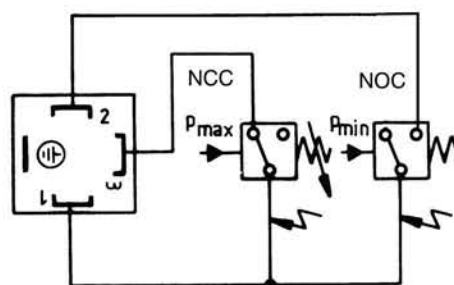
DS-105/.../X1

Standard

Detailed Symbol



Simplified



Electrical wiring

Clamp 1-2:

Break of current
at fall below the
min. pressure

Clamp 1-3:

Break of current
at reach of max.
pressure

Other possibilities on request! When ordering please advise electrical symbol with scetch.