

Hydraulic accessories

Pressure switches type DG	266
Hydraulic miniature accumulators type AC	268
Piston type accumulator type HPS	270
Hydraulic accessories	272



*Pressure switches type DG
and analogous pressure sensors*

Type	Nomenclature/Design	Capacity	p _{max}	Piston diameter
DG	Spring-loaded piston-type pressure switch, electronic pressure switch <ul style="list-style-type: none"> ■ Manifold mounting ■ Screw-in version ■ Version for pipe connection 		0 ... 700 bar 0... 1000 bar	
AC	Hydraulic accumulator <ul style="list-style-type: none"> ■ Screw-in version 	V ₀ : 0,013 ... 2.8 dm ³	500 bar	
HPS	Piston-type accumulator <ul style="list-style-type: none"> ■ Basic type HPS 	V ₀ : 0,4 ... 80 dm ³	p _{operation} : 415 bar	80 ... 250 mm
Hydraulic accessories	Reducing connector, connection fitting, screen filter, wire mesh filter, pressure gauge <ul style="list-style-type: none"> ■ Screw-in version ■ Version for pipe connection 		350 ... 700 bar	

Hydraulic accessories

4 Pressure switches type DG

Pressure switches close or open electrical contacts when under pressure. They are used to issue an electrical switching command or signal for further operations when a predefined pressure value is reached.

Different versions (with pressure setting on an adjusting knob, main and secondary switch, screw-on pressure switch) enable their use in a wide range of applications. A design-related difference (hysteresis) of 8... 20% is to be expected between the upper and lower switching point in piston-type pressure switches.

In contrast to this, the type DG5E and DG6 electronic pressure switches provide the option to select two independent pressure switching points and/or program or adjust the hysteresis.

Type DT is an analogous pressure sensor.

Features and benefits:

- Compact design
- Option of integration into the HAWE modular system
- Operating pressures up to 1000 bar

Intended applications:

- General hydraulic systems
- Machine tools



Nomenclature:	Spring loaded piston type pressure switch Electronic pressure switch Pressure transducer
Design:	Screw-in version Manifold mounting Designed for pipe fittings
P_{max}:	0... 1000 bar

Design and order coding example

DG 1 RF
DG 35 V -YS 8

Hydraulic connection

- With various tapped journals or to be mounted at fittings (type DG 3..)
- Combination with various fittings

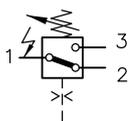
Means of adjustment, mounting

- Manually adjustable (R) or Turn-knob (V, H = with lock) (type DG 3..)
- Design with bezel for installation in control panels (F)

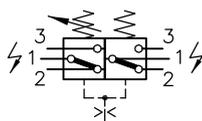
Basic type Pressure switch type DG
 Type DG 1, 3, 8 (spring loaded piston type switch)
 Type DG 5, DG 6 (Electronic pressure switch with two switch points)
 Operating voltage 12 V DC, 24 V DC, 110 V AC, 230 V AC
 Analogous pressure transducer type DT
 Type DT 11
 Type DT 2

Function

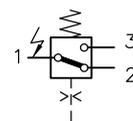
DG 1 R



DG 8

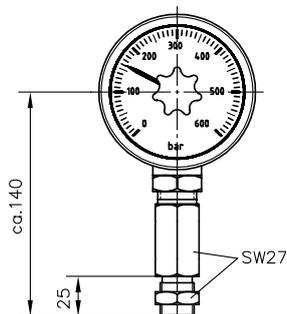


DG 3...

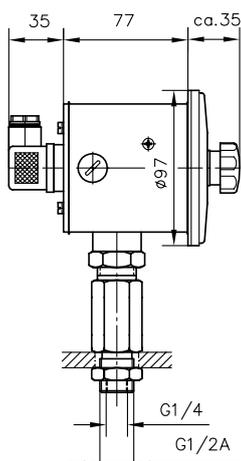


General parameters and dimensions

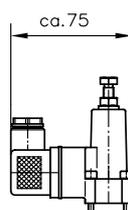
DG 1 R



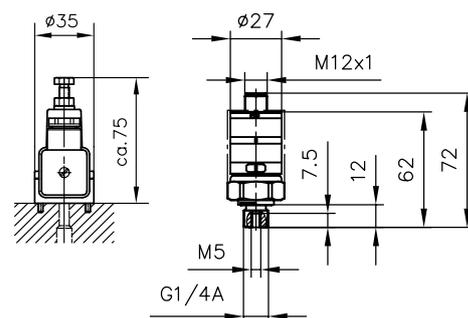
DG 8



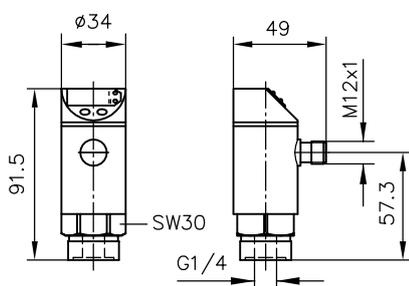
DG 3 ..



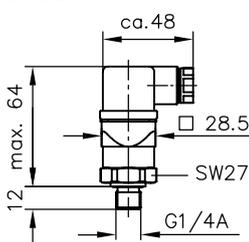
DG 6.



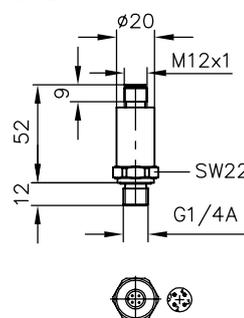
DG 5 E



DT 11



DT 2



	Brief description	Adjustable pressure p_{max} [bar] ¹⁾	Ports (BSPP)	m [kg]
DG 1 R	Adjustment via turn-knob at the dial	20 ... 600	G 1/2 or G 1/4 A	1,3
DG 8	Version with two pressure switches Main switch: Adjustment via turn-knob at the dial Secondary switch: Adjustment via set screw	20 ... 600 and 20 ... 180	G 1/2 or G 1/4 A	1,35
DG 3..	Compact design for manifold mounting Adjustment via set screw	4 ... 700	G 1/4 or G 1/4 A ²⁾	0,3
DG 5 E	Electronic pressure switch with two switch points	0 ... 600	G 1/4 A	0,25
DG 6..		0 ... 400	G 1/4 A or M 5	0,08
DT 11	Analogous pressure sensor	0 ... 1000	G 1/4	0,08
DT 2		0 ... 600	G 1/4	0,7

1) The max. operation pressure of 700 bar is not influenced by the max. set pressure
2) For versions with adapter only

Associated technical data sheets:

- Pressure switches type DG: [D 5440](#)
- Electronic pressure switch type DG 5 E: [D 5440 E/1](#)
- Electronic pressure switch type DG 6: [D 5440 F](#)

Hydraulic accessories:

- Fittings type X, X 84: [Page 272](#)

Similar products:

- Analogous pressure sensor type DT 11: [D 5440 T/2](#)
- Analogous pressure sensor type DT 2: [D 5440 T/1](#)

See also section "Devices for special applications":

- Hydraulics for clamping purposes
- Press controls
- Devices for up to 700 bar

Hydraulic accessories

4 Hydraulic miniature accumulators type AC

The hydraulic accumulators type AC are available in two categories. The hydraulic miniature accumulators with a capacity of 0.013 dm³ and 0.040 dm³ are used for applications including clamping hydraulics for volume compensation in the event of temperature fluctuations, covering possible oil losses due to leakage or oscillation damping of functional parts activated by pressure difference.

The diaphragm accumulators with a capacity of up to 3.5 dm³ are primarily used as a source of pressure oil for supporting/increasing the pump delivery flow and storing pressure energy, in order to achieve an accumulator charging circuit, for example. Various fittings enable the integration of a hydraulic system in different installation positions and at different installation points.

Features and benefits:

- Compact design
- Option of integration into the HAWE modular system
- Operating pressures up to 500 bar

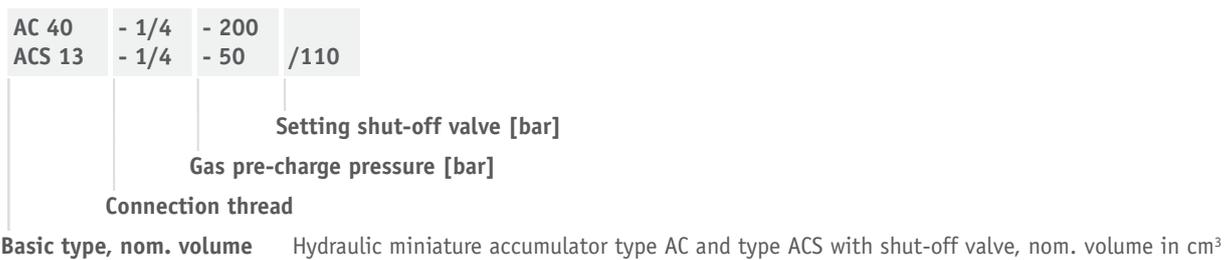
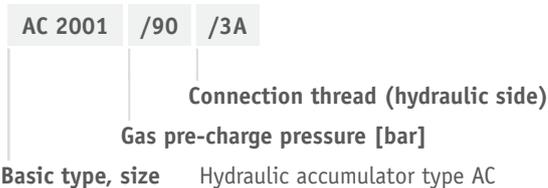
Intended applications:

- Clamping systems
- Jigs
- Accumulator charging systems



Nomenclature:	Hydro-pneumatic accumulator
Design:	Screw-in version
p_{max}:	500 bar
V_{max}:	1,95 dm ³

Design and order coding example

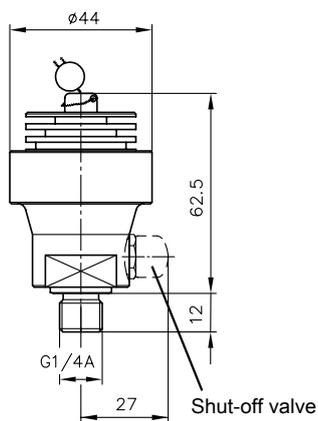


Function

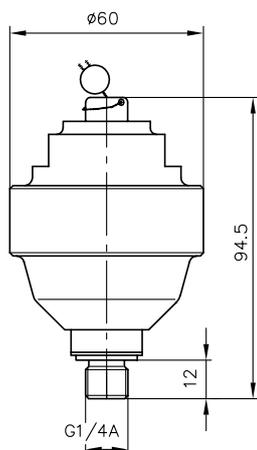


General parameters and dimensions

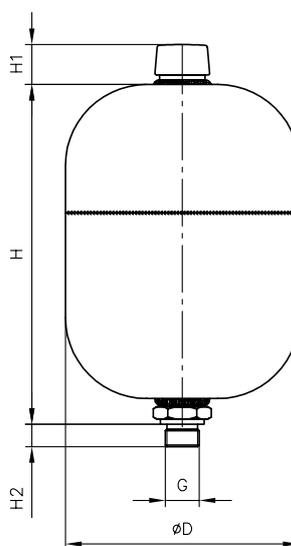
AC(S) 13 - 1/4



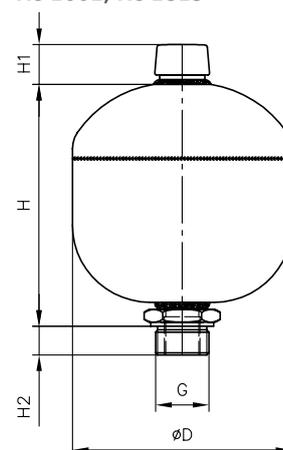
AC 40 - 1/4



AC 0725, AC 202, AC 3225



AC 603, AC 1002, AC 1414, AC 2002, AC 2825



	V ₀ [dm ³]	p _{max} [bar]	Max. gas filling pressure p ₀ [bar]	Ports (BSPP)	Dimensions [mm]				m [kg]
					H	H1	H2	D	
Hydraulic miniature accumulator									
AC 13-1/4	0.013	500	250	G 1/4 A	see illustration				0.3
ACS 13-1/4	0.013	500	250	G 1/4 A	see illustration				0.3
AC 40-1/4	0.040	400	250	G 1/4 A	see illustration				0.65
Hydraulic accumulator									
AC 0725/1A	0.075	250	130	G 1/4 A	81	26.5	12	64	0.6
AC 202/3	0.16	250	130	G 3/8 A	102	26.5	-	74	0.8
AC 3225/3A	0.32	210	140	G 1/2 A	101.5	25	12	92.5	1.4
AC 603/3	0.6	330	200	G 1/2	149	23	-	115	3.3
AC 1002/22	1.0	210	140	M 22 x 1,5	151	25	18	136	3.5
AC 1414/2A	1.4	140	120	G 3/8 A	162	25	18	147	4.2
AC 2002/4	1.95	250	140	G 3/4	229	25	-	155	7.5
AC 2825/2AW	2.8	250	130	G 3/8 A	246	26.5	18	167	8.2

Associated technical data sheets:

- Hydraulic miniature accumulators type AC: [D 7571](#)
- Diaphragm accumulator type AC: [D 7969](#)

Hydraulic accessories:

- Fittings type X84: [Page 272](#)

Similar products:

- Piston type accumulator type HPS: [Page 270](#)

See also section "Devices for special applications":

- Hydraulic clamping systems

Hydraulic accessories

4

Piston type accumulator type HPS

In many mobile and stationary applications, a modern hydraulic system includes reliable and powerful hydraulic accumulators. They are especially useful when energy is to be stored, pressure surges are to be damped, leakage is to be compensated or high flows are to be delivered in a short time. There is usually no faster or easier solution to do so than with a piston-type accumulator. The freely moving piston separates the compressible gas cushion and the hydraulic fluid. High-quality and thoroughly tested piston sealings guarantee a reliable separation of gas and oil even under extreme conditions.

To enable any arrangement of the piston-type accumulator, the accumulators are available with the appropriate mounting clips.

Features and benefits:

- Compact design
- Option of integration into the HAWE modular system

Intended applications:

- Accumulator charging systems
- Construction machinery
- Wind turbine systems

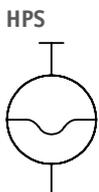


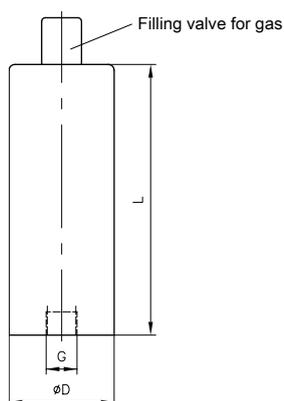
Basic type:	HPS
Nomenclature:	Piston accumulator
Operation pressure:	415 bar
Capacity:	0,1 - 80 dm ³
Internal piston diameter:	80 - 250 mm

Design and order coding example

HPS 11	- 250	- 160	- 0050
			Nom. volume V_0 [dm ³]
			Int. diameter [mm]
			max. operating pressure [bar] Pressure ratings 250 bar, 350 bar, 415 bar
Basic type	Piston type hydraulic accumulator type HPS		

Function



General parameters and dimensions
HPS


	Nom. volume V_0 [dm ³]	p_{\max} [bar]	Ports (BSPP)	Dimensions [mm]	
				D	L
HPS 11 - 250 - 080	0.4 ... 4.0	250	G 3/4	90	233 ... 949
HPS 11 - 250 - 100	2.0 ... 10.0		G 1	110	439 ... 1458
HPS 11 - 250 - 160	5.0 ... 30.0		G 1 1/2	180	436 ... 1680
HPS 11 - 250 - 200	8.0 ... 50.0		G 2	229	233 ... 1840
HPS 11 - 250 - 250	10.0 ... 80.0		G 2	275	465 ... 1886
HPS 11 - 350 - 080	0.4 ... 4.0	350	G 3/4	95	254 ... 970
HPS 11 - 350 - 100	2.0 ... 10.0		G 1	115	457 ... 1475
HPS 11 - 350 - 160	5.0 ... 30.0		G 1 1/2	185	458 ... 1702
HPS 11 - 350 - 200	8.0 ... 50.0		G 2	225	513 ... 1849
HPS 11 - 350 - 250	10.0 ... 80.0		G 2	280	491 ... 1917
HPS 11 - 415 - 080	0.4 ... 4.0	415	G 3/4	95	254 ... 970
HPS 11 - 415 - 100	2.0 ... 10.0		G 1	115	469 ... 1488
HPS 11 - 415 - 160	5.0 ... 30.0		G 1 1/2	185	458 ... 1702
HPS 11 - 415 - 200	8.0 ... 50.0		G 2	230	522 ... 1859
HPS 11 - 415 - 250	10.0 ... 80.0		G 2	290	491 ... 1917

- The data listed represent only a selection of the various differing versions

Associated technical data sheets:

- Piston-type accumulator type HPS: [D 7969 HPS](#)

Similar products:

- Diaphragm accumulator type AC: [Page 268](#)

Hydraulic accessories

4

Hydraulic accessories

Hydraulic systems use measuring instruments () for pressure monitoring, command devices for pressure-controlled switching (pressure switches) and hydraulic accumulators. Using the various fittings, these devices can be connected to the pressure pipes of HAWE hydraulic power packs as well as valves in a wide range of installation situations.

help to combine devices. Other accessories, such as screen and wire mesh filters protect hydraulic devices from larger, stray impurities that occasionally occur. These are available in two versions: as screen filters and wire mesh filters (wire mesh filters preferentially used in control circuits without a significant current flow).

Features and benefits:

- Compact design
- Option of integration into the HAWE modular system
- Operating pressures up to 700 bar

Intended applications:

- General hydraulic systems



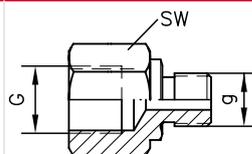
Nomenclature:	Reducing connector Connection fitting Screen filter Wire mesh filter Pressure gauge
Design:	Screw-in version for pipe connection
p_{max}:	350... 700 bar

Designs

Reducing connectors (various dimensions)

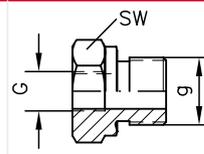
G - g

- Internal thread - external thread
- BSPP thread - metric thread
- BSPP thread - BSPP thread
- Metric thread - metric thread
- Metric thread - BSPP thread



SW 19 - 55

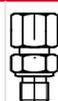
Example: G 1/2A - M 16 x 1.5



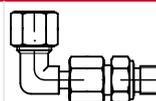
Example: G 1/2 - G 1A

Fittings

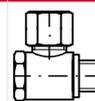
- Connection fitting with tapped journal G 1/4
- Connection fitting with fastening nut and internal port G 1/4
- Connecting pieces for attaching the cutting ring for external pipe diameter 6 to 20 mm
- Straight screw-in fitting
- Swivel fitting
- L-fitting



Example:
Straight fitting
type X... G



Example:
Elbow fitting
type X... V



Example:
Swivel fitting
type X... S

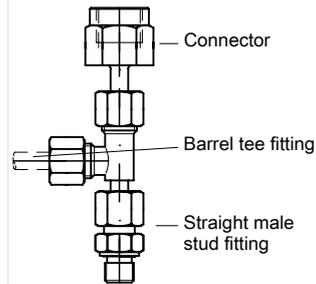
Symbol:



Fitting combinations

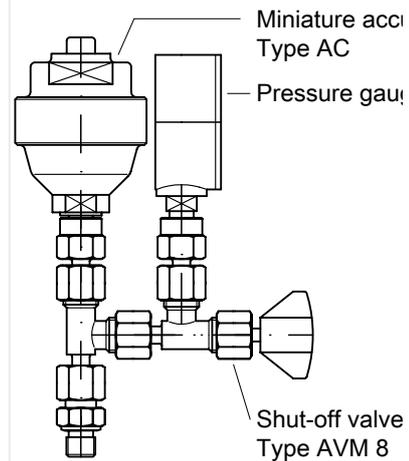
Consisting of:

- Connecting pieces
- Straight screw-in fitting
- Swivel fitting
- L-connecting pieces
- Elbow fitting
- AVM 8 shut-off valve
- Locking element



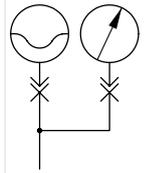
Example: X 84T

Symbol:



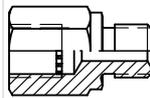
Example: X 84U - AC 40/100-9/400

Symbol:

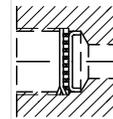


Screen and wire mesh filters

- BSPP thread
- Metric thread
- Screw-in strainer type HFC (hole \varnothing 0.63 mm)
- Screw-in wire mesh filter disc type HFC.. F (filter fineness approx. 100 μ m)
- Also available with housing



Example:
HFE 3/8
Strainer with housing (hole \varnothing approx. 0.5 mm), with connection thread G 3/8(A)



Example:
HFC 1/4 F
Screw-in wire mesh filter disc for port G 1/4, filter fineness approx. 100 μ m

Symbol:



Associated technical data sheets:

- Reducing connectors: [D 845](#)
- Fittings type X: [D 7065](#)
- Fitting combination type X84: [D 7077](#)
- Screen and wire mesh filters: [D 7235](#)
- Shut-off valves type AVM 8: [Page 238](#)

See also chapter "Equipment for special applications":

- Clamping hydraulics