

Pneumatic and Electropneumatic Actuators

Series 4, Types 37, 38, 39, 3D 47, 48, 49, 4D



Description

Kammer actuators are powerful, compact units designed for high stroking thrusts. The actuators are fully reversible without additional parts. Different spring sets are available for air supply pressures up to 4.2 bar.

	Actuator without positioner				Actuator with P/P positioner				Actuator with I/P positioner			
	47	48	49	49D	37	38	39	39D	IP-37	IP-38	IP-39	IP-39D
Diaphragm area	80	200	500	2 x 500	80	200	500	2 x 500	80	200	500	2 x 500
Thrust max.	160	400	1000	2000	160	400	1000	2000	160	400	1000	2000
Stroke	10/20	10/20	10/20/40	10/20/40	10/20	10/20	10/20/40	10/20/40	10/20	10/20	10/20/40	10/20/40
Time at stroke												
10 mm	0.1	0.25	0.5	1	0.5	1	2.5	5	0.5	1	2.5	5
20 mm	0.2	0.5	1	2	1	2	5	10	1	2	5	10
40 mm	–	–	2	4	–	–	10	20	–	–	10	20
Signal range	–				3 – 15 / 3 – 9 / 9 – 15 psi 0.2 – 1.0 / 0.2 – 0.6 / 0.6 – 1.0 bar 20 – 100 / 20 – 60 / 60 – 100 kPa				0/4 – 20, 4 – 12, 12 – 20 mA 20 – 12, 12 – 4, 20 – 0/4 –			
Input resistance	–				–				260/170 Ohm**			
Inductivity / Capacitance	–				–				negligible (≈0)			
Spring range	see appropriate spare parts list				see appropriate spare parts list				see appropriate spare parts list			
Supply pressure	20 – 60 psi 1.4 – 4.2 bar 140 – 420 kPa				20 – 60 psi 1.4 – 4.2 bar 140 – 420 kPa				20 – 60 psi 1.4 – 4.2 bar 140 – 420 kPa			
Accuracy	–				≤1%				≤ 1%			
Hysteresis	–				< 1%				< 1%			
Operating sensitivity	–				–				= 0.1%			
Amplification factor	–				50				50			
Supply pressure influence	–				0.4% / 0.1 bar				0.4% / 0.1 bar			
Air consumption at 1,4 bar	–				0.6 Nm ³ / h				0.6 Nm ³ / h			
Electrical protection	–				–				EEx ia C T6, PTB No. Ex-93.C. 2104X Suitable for connection to intrinsical safe circuits with I max. ≤ 60 mA (T6) thru 150 mA (T4)			
Housing protection	–				–				IP 54 / IP 65			
Allowable ambient temp.	– 30 to + 80 °C (-22 to +176° F)											
Actuator action	air-to-open / air-to-close, reversible											
Installation position	optional											
Air supply	dry and oil-free (instrument air)											

* Stroking time with 1.4 bar supply pressure. ** Transducer adjustable = 260 ohm, transducer not adjustable = 170 ohm,

Actuator thrusts

Air-to open

Actuators with without positioner size		Diaphragm area (cm ²)	Stroke (mm)	Spring set Nr.	Spring range (bar)	Actuator thrust (daN) 1 daN ≈ 1kp Actuators with or without positioner at supply pressure (bar)						
1.4	2.1					2.5	3.0	3.5	4.2			
37	47	80	10	712	0.5 - 1.1	40	80	80	120	120	160	
					713							1.0 - 1.9
					714							1.0 - 2.2
				715	1.5 - 2.7	40	72	80	104	112	144	
					716							1.5 - 3.0
					717							2.0 - 3.9
			20	722	0.5 - 1.1	100	200	200	300	300	400	
					723							0.9 - 1.9
				724	1.0 - 2.2	100	180	200	260	280	360	
					725							1.3 - 2.7
726	1.4 - 3.0	250	500	500	750	750	1000					
727	1.8 - 3.8											
38*	48*	200	10	812	0.5 - 1.1	100	200	200	300	300	400	
					813							1.0 - 1.9
					814							1.0 - 2.2
				815	1.5 - 2.7	100	180	200	260	280	360	
					816							1.5 - 3.0
					817							2.0 - 3.8
			20	822	0.5 - 1.1	250	500	500	750	750	1000	
					823							0.9 - 1.9
				824	1.0 - 2.2	500	1000	1000	1500	1500	2000	
					825							1.3 - 2.7
826	1.4 - 3.0	500	800	900	1200	1300	1700					
827	1.8 - 3.8											
39	49	500	20	922	0.5 - 1.1	500	1000	1000	1500	1500	2000	
					923							1.0 - 1.9
					924							1.0 - 2.2
				925	1.5 - 2.7	500	800	900	1200	1300	1700	
					926							1.5 - 3.0
					927							2.0 - 3.8
			40	942	0.5 - 1.0	500	800	900	1200	1300	1700	
					943							0.8 - 1.6
				944	0.9 - 1.9	500	800	900	1200	1300	1700	
					945							1.2 - 2.3
946	1.3 - 2.6	500	800	900	1200	1300	1700					
947	1.7 - 3.3											
3D	4D	2 x 500	20	922	0.5 - 1.1	500	1000	1000	1500	1500	2000	
					923							1.0 - 1.9
					924							1.0 - 2.2
				925	1.5 - 2.7	500	800	900	1200	1300	1700	
					926							1.5 - 3.0
					927							2.0 - 3.8
			40	942	0.5 - 1.0	500	800	900	1200	1300	1700	
					943							0.8 - 1.6
				944	0.9 - 1.9	500	800	900	1200	1300	1700	
					945							1.2 - 2.3
946	1.3 - 2.6	500	800	900	1200	1300	1700					
947	1.7 - 3.3											

* Actuators size 38 and 48 for thrusts ≥ 250 daN are supplied only with 3 yoke rods.

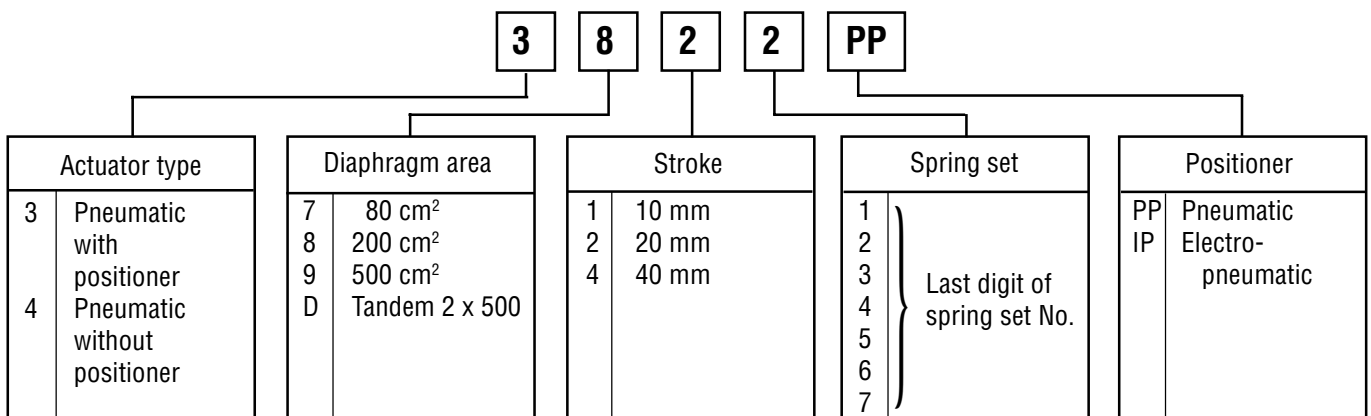
Actuator thrusts

Air-to-close

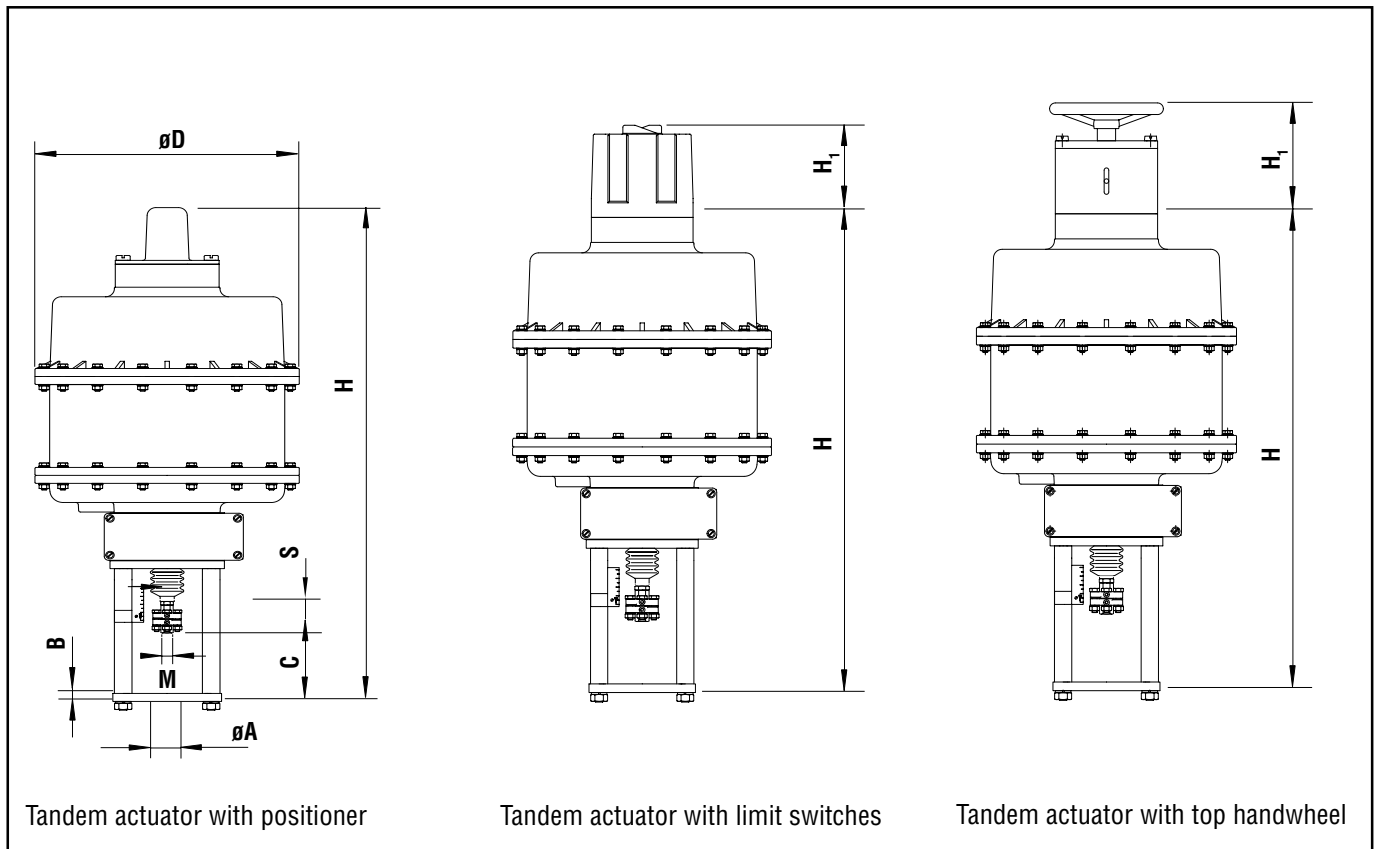
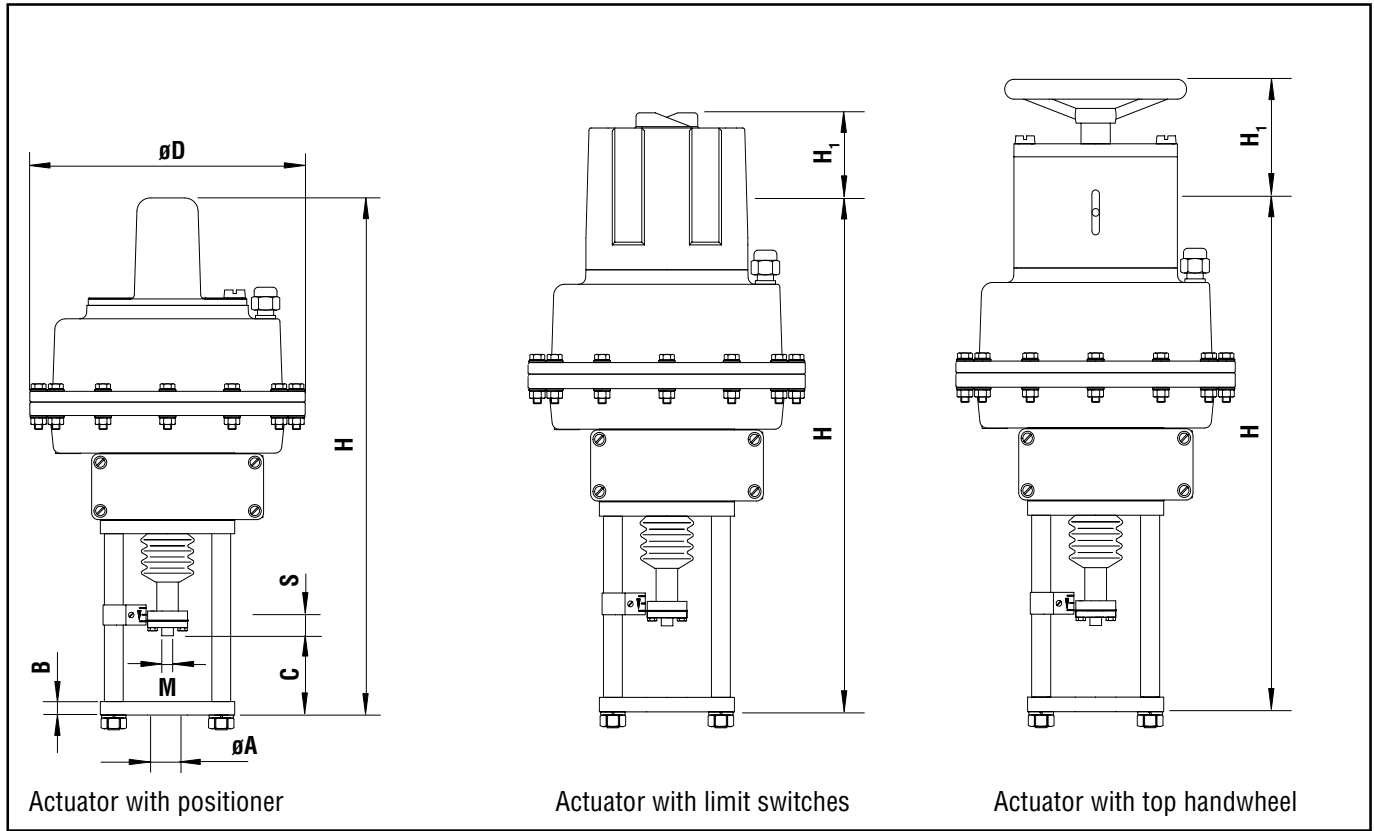
Actuators with without positioner size		Diaphragm area (cm ²)	Stroke (mm)	Spring set Nr.	Spring range (bar)	Actuator thrust (daN) 1 daN ≈ 1kp Actuators with or without positioner at supply pressure (bar)					
						1.4	2.1	2.5	3.0	3.5	4.2
37	47	80	10	711	0.3 - 0.9	32	80	100	140	110	160
				712	0.5 - 1.1						
				713	1.0 - 1.9						
			20	722	0.5 - 1.1		64	100	140	110	160
				723	0.9 - 1.9						
38*	48*	200	10	811	0.3 - 0.9	80	200	240	340	280	400
				812	0.5 - 1.1						
				813	1.0 - 1.9						
			20	821	0.3 - 0.9	80	200	240	340	280	400
				822	0.5 - 1.1						
				823	0.9 - 1.9						
39	49	500	20	921	0.3 - 0.9	200	500	600	850	700	1000
				922	0.5 - 1.1						
				923	1.0 - 1.9						
			40	941	0.3 - 0.9	200	500	600	850	800	1100
				942	0.5 - 1.0						
				943	0.8 - 1.6						
3D	4D	2 x 500	20	921	0.3 - 0.9	400	1000	1200	1700	1400	2000
				922	0.5 - 1.1						
				923	1.0 - 1.9						
			40	941	0.3 - 0.9	400	1000	1200	1700	1600	2200
				942	0.5 - 1.0						
				943	0.8 - 1.6						

* Actuators size 38 and 48 for thrusts ≥ 250 daN are supplied only with 3 yoke rods.

Model Code



Dimensions [mm] and Weights [kg]



Dimensions [mm]

Actuator size	37	38		39	3D*	47	48		49	4D*
No of yoke rods	2	2	3	3		2	2	3	3	
S Stroke	10/20	10/20		20/40		10/20	10/20		20/40	
A ø Standard (optional)	20 (30, 38)	20 (30, 38)	30 (38)	30 (38, 45)		20 (30, 38)	20 (30, 38)	30 (38)	30 (38, 45)	
B	8 (12)	8 (12)	10	10 /15		8 (12)	8 (12)	10	10 /15	
C Standard (bellows, NAMUR)	55 (80)	55	80	80		55 (80)	55	80	80	
Dø	150	205		300		150	205		300	
H Standard / bellows	310/335	370	425	470	600	245/270	305	360	405	535
Yoke rods acc. to NAMUR	330/335	390	425	470	600	265/270	325	360	405	535
H ₁ Top mounted handwheel	100/110	100	130	130/190		100/110	100	130	130/190	
Limit switches	75	80	80	80		75	80	80	80	
M Internal metric thread	M4/M6/M10	M6	M6/M10	M10/M16		M4/M6/M10	M6	M6/M10	M10/M16	
Air connection	NPT 1/4" for all actuators (G 1/4 on request)									

* Dimensions for actuators ≤ 1000 daN. Dimensions for actuators with higher thrusts on request.

Weights [kg]

Actuator size	No. of yoke rods	Standard	Additional weight	
			Top handwheel	Limit switches
37	2	3,5	1,1	1,5
38	2	6,5	2,0	2,5
	3	7,5	2,2	2,5
39	3	15	3,2	2,5
3D	3	30	3,2	2,5
47	2	2,2	1,1	1,5
48	2	5,0	2,0	2,5
	3	6,1	2,2	2,5
49	3	13,5	3,2	2,5
4D	3	29	3,2	2,5

Germany

**Flowserve Essen GmbH
Kammer Ventile
Manderscheidtstrasse 19
D-45141 Essen
Tel.: (02 01) 89 19 5 • Fax: (02 01) 89 19 600**

Flowserve Essen GmbH
Sales Office Hamburg

Tel.: (02 01) 89 19 665
Fax: (02 01) 89 19 662

Flowserve Essen GmbH
Sales Office Niederrhein
Hoher Weezer Weg 27a

D - 47574 Goch
Tel.: (0 28 23) 9 80 02
Fax: (0 28 23) 9 80 03

Flowserve Essen GmbH
Sales Office West
Büdericher Straße 8

D - 47877 Willich
Tel.: (0 21 54) 20 20 71
Fax: (0 21 54) 20 20 73

Flowserve Essen GmbH
Sales Office Maintal
Robert-Bosch-Strasse 11

D - 63477 Maintal
Tel.: (0 61 81) 42 404 11
Fax: (0 61 81) 42 404 29

Flowserve Essen GmbH
Sales Office Frankfurt
Steinweg 22

D - 65824 Schwalbach a. Ts.
Tel.: (06196) 85 203
Fax: (06196) 84 462

Flowserve Essen GmbH
Sales Office Südwest
Am Mühlhübel 13

D - 67686 Mackenbach
Tel.: (06 374) 99 27 84
Fax: (06 374) 99 27 85

Flowserve Essen GmbH
Sales Office Augsburg
Staatsstraße 10

D - 86450 Altenmünster
Tel.: (0 82 95) 9 00 03
Fax: (0 82 95) 9 00 04

Flowserve Essen GmbH
Sales Office Ost
Oberhasel 18

D - 07407 Kirchhasel
Tel.: (0 36 72) 43 19 82
Fax: (0 36 72) 43 19 89

FRANCE

Flowserve S.A.S.
SEREG
12, av. du Québec, BP645
F- 91965 Courtaboeuf Cedex

Tel.: +33 1 60 92 32 87
Fax: +33 1 60 92 32 99

USA / CANADA

Flowserve (FCD)
KAMMER VALVES, INC.
1300 Parkway View Drive
Pittsburgh, Pa 15205 U.S.A.

Tel.: +1 412 787 - 8803
Fax: +1 412 787 -1944

SWITZERLAND

Flowserve S.A.
Kammer Vannes.
Allée du Quartz 1
CH-2300 La Chaux-de-Fonds

Tel.: +41 (0) 32 925 9700
Fax: +41 (0) 32 926 5422

AUSTRALIA

Flowserve Australia PTY LTD
14 Dalmore Drive
Scoresby VICTORIA 3179

AUSTRALIA

Tel.: +61 3 9764 0060
Fax: +61 3 9764 0013

AUSTRIA

Flowtec Industrietechnik GmbH
Weinitzstrasse 1
8045 Graz

AUSTRIA

Tel.: +43 (0) 316 69 70 69-0
Fax: +43 (0) 316 69 70 69-9

DENMARK

Scana Godtkjær & Armatur as
Kong Svends Vej 65
2765 Smorum

DENMARK

Tel.: +45 44 20 00 00
Fax: +45 44 20 00 01

FINLAND

KONTRAM OY
PO. Box 88
02201 Espoo

FINLAND

Tel. +358 9 8866 4500
Fax: +358 9 8866 4599

GREAT BRITAIN

Flowserve
Station Road, Pershore
Worcestershire, WR10 2BZ

ENGLAND

Tel.: +441386 554 551
Fax: +441386 554 968

IRELAND

Flexachem Manufacturing Ltd
Donnybrook Commercial Centre
Douglas, Cork

IRELAND

Tel.: +353 21 363742
Fax: +353 21 891297

ISRAEL

TECHNOMAD LTD
19 Hashikma Str.
Azor 58009

ISRAEL

Tel.: +972 3 5585550
Fax: +972 3 5585090

ITALY

EUROVALVE S.R.L.
Via Camicie Rosse 11
20090 Opera (MI)

ITALY

Tel.: +390 2 57 6018 45
Fax: +390 2 57 6017 00

JAPAN

TOKO VALEX Co., Ltd
2-17, 4-chome, Matsushima
Edogawa-Ku, Tokyo

JAPAN 132

Tel.: +81 3 3655 6769
Fax: +81 3 3655 5181

NETHERLANDS

Conovalve B.V.
Postbus 270
3100 AG Schiedam

NETHERLANDS

Tel.: +31 10 4 71 53 33
Fax: +31 10 4 70 44 82

NORWAY

NOR Instruments A.S.
Jerikoveien 26
1067 Oslo

NORWAY

Tel.: +47 2210 05 00
Fax: +47 2210 0510

R. O. C.

Eagle Process Service Ud.
Suite 4, 5th Floor No. 312
Chung Hsiao E. Road, Sec. 4
Taipei, Taiwan, R. O. C.
TAIWAN

Tel.: +8862 2751 6197
Fax: +8862 2781 4640

SINGAPORE

Valtek Asia Pacific Operations
c/o Durco-Valtek Asia
12, Tuas Avenue 20
Singapore 2263
SINGAPORE

Tel.: +65 862 3332
Fax: +65 862 4940

SOUTH AFRICA

Valtek South Africa (Pty.) Ltd
P. O. Box 9279
Edenglen 1613

SOUTH AFRICA

Tel.: +2711 609 2094-96
Fax: +2711 609 3735

SWEDEN

alnab
Ögårdesvägen
433 86 Partille

SWEDEN

Tel.: +46 31 44 94 50
Fax: +46 31 44 94 55

