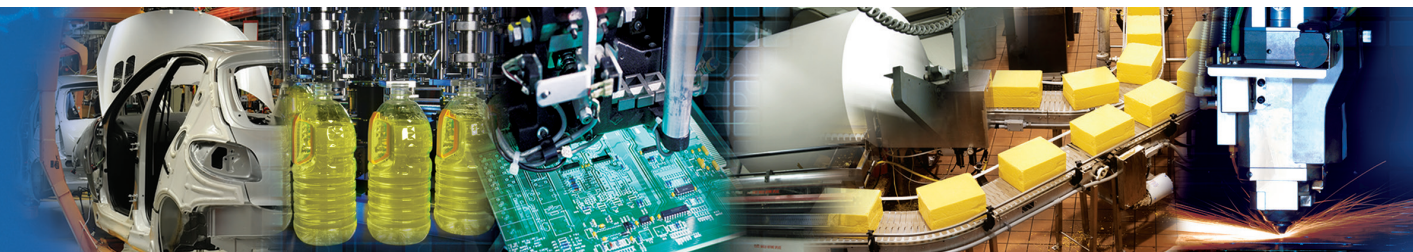


numatics®

ISO/VDMA Series

ISO 6431 and VDMA 24562 Cylinder Line



www.numatics.com

ISO/VDMA Series

Features and Benefits	3
How to Order	4
Technical Information	5
Dimensions	
Tie-Rod Version	6-7
Mounting Parts	8-14
Switches	15
Cords M8-thread for Switches and Sensors with Connector	15
LP Series for Cylinders of Profile Type	16
Sensing Part Numbers	17-19
World Switches	20
World Application Detail	21

The ISO/VDMA Series is an aluminum body air cylinder line that is designed to meet all of your international cylinder requirements. In fact, our ISO/VDMA Series cylinders are designed to meet the requirements of ISO 6431 (International) and VDMA 24562 (Germany). The combination of lightweight aluminum construction and proven reliability makes our ISO/VDMA Series the Superior Interchangeable metric, international standard air cylinder line.

Standard Specifications:





- Conforms to the following standards:
 - ISO 6431 (International)
 - VDMA 24562 (Germany)
- Bore sizes from 32 mm through 250 mm
- Nominal pressure rating is 10 bar (150 psi)
- Magnetic piston standard
- Complete range of mounting accessories:
 - Flange mounts
 - Front and rear
 - Clevis mounts
 - Rear clevis
 - Rod clevis
 - Rod eye
 - Foot brackets
 - Oscillating brackets
- Double acting
- Single and double rod end
- Tube made from anodized aluminum with wear resistant coating
- Flush switch mounting in cylinder tube (when using profile tubing)
- Adjustable cushions
- Temperature range:
 - -20° C to + 80° C
 - -5° F to + 175° F
- Seals made from Buna-N and Polyurethane
- Non-lube added service



How to Order

Z G 050 / 0080 C08 A1

Cylinder Series
Z = Tie-Rod Version

Cylinder Function	Cylinder Type
A = 	Heat Resistant Type Up to +180°C (FKM - Seals) Single Rod End w/o Magnet
B = 	Heat Resistant Type Up to +180°C (FKM - Seals) Double Rod End w/o Magnet
G = 	Single Rod End with Magnet
H = 	Double Rod End with Magnet

Piston Diameter

- 032 = 32 mm (1.26)
- 040 = 40 mm (1.57)
- 050 = 50 mm (1.97)
- 063 = 63 mm (2.48)
- 080 = 80 mm (3.15)
- 100 = 100 mm (3.94)
- 125 = 125 mm (4.92)
- 160 = 160 mm (6.30)
- 200 = 200 mm (7.78)

Stroke *

- 0025 = 25 mm (0.98)
- 0050 = 50 mm (1.97)
- 0080 = 80 mm (3.15)
- 0100 = 100 mm (3.94)
- 0125 = 125 mm (4.92)
- 0160 = 160 mm (6.30)
- 0200 = 200 mm (7.78)
- 0250 = 250 mm (9.84)
- 0320 = 320 mm (12.60)
- 0400 = 400 mm (15.75)
- 0500 = 500 mm (19.69)

* Further strokes on request.

Options*

- 00 = Stainless Steel Rod and Jam Nut
- A1 = Hard Piston Rod, Chrome Plated (Standard)
- 1A = Rod Extension (must specify length)
- 2A = Thread Extension (must specify length)
- 1R = Special Rod End
- * More Options on Request

Cylinder Including Mounting Parts

- C01 = Foot Bracket (MS1)
- CF2 = Flange to VDMA 24562 T.2 (MF1, MF2), Front Side
- CR2 = Flange to VDMA 24562 T.2 (MF1, MF2), Back Side 2
- C03 = Foot Bracket (Plain)
- CF4 = Rod Clevis, Front Side
- CD4 = Rod Clevis, Both Sides (Only Type H)
- CF5 = Oscillating Clevis, Front Side
- CD5 = Oscillating Clevis, Both Sides (Only Type H)
- C07 = Oscillating Brackets to VDMA 24562 T.2 T.2 (MP4), with Lugs
- C08 = Oscillating Brackets to VDMA 24562 T.2 T.2 (MP2), Fork Type
- C09 = Pivot to VDMA 24562 T.2 (MT4),
- CV9 = Pivot to VDMA 24562 T.2 (MT4) Swiveled
- C10 = Pivot Fastening, End Cap Mounting Front Side
- C13 = Oscillating Joint Bracket (Spherical)
- C14 = Oscillating Brackets to VDMA 24562 T.2, Fork Type, Narrow Clevis
- BOI = Nu Lock Rod Lock
- BMI = Nu Lock Rod Lock Ready
- 000 = Basic No Mount

Order example: ZG050/0080C08A1

Here we have a double acting tie rod version cylinder with single rod end. Piston diameter is 50 mm and stroke 80 mm. The cylinder is equipped with a magnet for switch sensing and has cushioning. The cylinder will be mounted with oscillating brackets, fork type. Optionally it has a hard chrome plated piston rod.

Technical Information

Theoretical Force Table for Double Acting Cylinders with Piston Diameters 32 mm (1.26) to 200 mm (7.78)

Piston Diameter mm (Inches)	Piston Rod Diameter mm (inches)	Effective Piston Surface (cm ²)	Pressure (bar)									
			2	3	4	5	6	7	8	9	10	
			Extend or Retract (N)									
32 (1.26)	12.0 (0.47)	for extend 8.0 (0.12)	141	212	282	353	424	494	565	636	706	
		for retract 6.9 (0.11)	122	182	243	304	366	427	488	549	610	
40 (1.57)	16.0 (0.63)	for extend 12.6 (0.20)	223	334	445	555	667	780	893	1001	1109	
		for retract 10.6 (0.16)	187	281	375	468	561	655	748	843	936	
50 (1.97)	16.0 (0.63)	for extend 19.6 (0.30)	346	520	692	865	1040	1207	1383	1560	1727	
		for retract 17.6 (0.27)	310	464	618	772	926	1080	1234	1338	1542	
63 (2.48)	20.0 (0.79)	for extend 31.2 (0.48)	551	827	1099	1373	1648	1933	2207	2482	2757	
		for retract 28.1 (0.44)	495	746	991	1236	1491	1736	1982	2237	2482	
80 (3.15)	25.0 (0.98)	for extend 50.3 (0.78)	889	1334	1776	2217	2668	3110	3551	4002	4444	
		for retract 45.3 (0.70)	800	1197	1599	2001	2403	2806	3198	3600	4002	
100 (3.94)	25.0 (0.98)	for extend 78.5 (1.22)	1383	2080	2776	3463	4159	4856	5543	6239	6926	
		for retract 73.6 (1.14)	1295	1952	2600	3247	3895	4552	5199	5847	6794	
125 (4.92)	32.0 (1.18)	for extend 122.7 (1.90)	2168	3247	4336	5415	6497	7583	8662	9751	10830	
		for retract 115.7 (1.79)	2036	3054	4072	5090	6108	7126	8144	9162	10180	
160 (6.30)	40.0 (1.57)	for extend 201.1 (3.12)	3551	5327	7102	8878	10654	12429	14205	15980	17756	
		for retract 188.5 (2.92)	3326	4993	6651	8319	9987	11644	13312	14970	16638	
200 (7.87)	40.0 (1.57)	for extend 314.2 (4.87)	5563	8319	11095	13871	16648	19424	22190	24966	27743	
		for retract 301.6 (4.68)	5327	7985	10654	13312	15971	18639	21297	23966	26624	

Friction losses are considered with 10%

Table on air consumption for double acting cylinders with piston diameter 1.26 (32mm) to 7.87 (200mm)

Piston Diameter mm (Inches)	Pressure (bar)									
	2	3	4	5	6	7	8	9	10	
	Air Consumption (l) Per 100 mm Stroke (Uncompressed Air)									
32 (1.26)	0.47	0.65	0.80	0.96	1.13	1.25	1.43	1.60	1.95	
40 (1.57)	0.75	1.02	1.25	1.49	1.70	2.10	2.25	2.50	2.69	
50 (1.97)	1.20	1.58	2.02	2.40	2.80	3.12	3.52	3.96	4.31	
63 (2.48)	1.94	2.53	3.16	3.78	4.39	5.08	5.60	6.18	6.86	
80 (3.15)	3.03	4.07	5.03	6.07	7.02	8.01	9.02	9.92	10.95	
100 (3.94)	4.76	6.33	7.93	9.50	11.05	12.68	14.25	15.81	17.59	
125 (4.92)	7.90	10.41	12.92	15.73	17.91	20.62	23.20	25.70	29.50	
160 (6.30)	12.51	16.60	20.85	25.80	28.90	34.39	38.62	41.95	46.72	
200 (7.87)	19.82	26.31	33.82	39.95	46.81	52.90	59.30	66.90	72.90	

Value for 1 double stroke

Weights (kg)

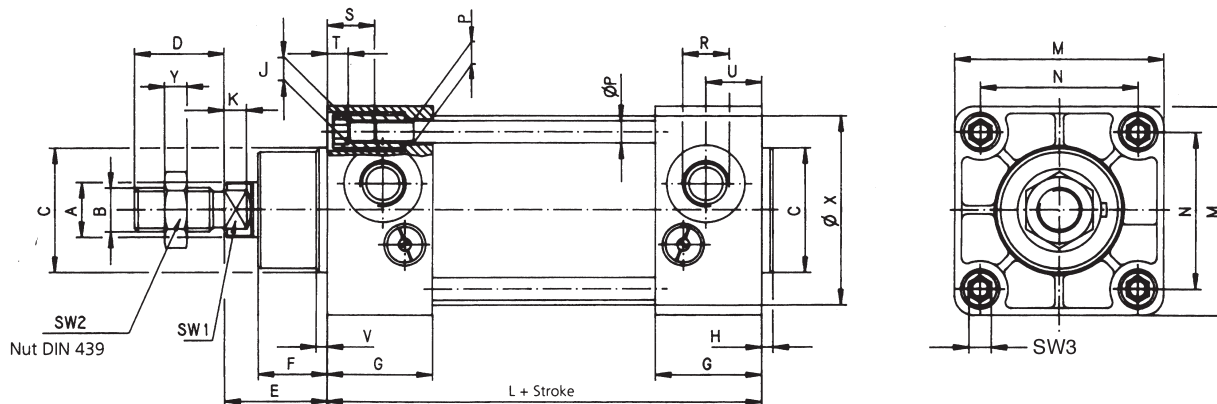
Cylinder Type ZA; or ZG, Piston Diameter	32	40	50	63	80	100	125	160	200	250*
0 mm stroke	0.55	0.76	1.29	1.67	2.72	3.70	5.37	10.75	14.75	31.45
to be added per 3.94 (100mm) stroke	0.23	0.32	0.51	0.54	0.81	0.87	1.39	1.80	2.20	8.20
* not for cylinder type ZG										
Cylinder Type ZB; or ZH, Piston Diameter mm (inches)	32 (1.26)	40 (1.57)	50 (1.97)	63 (2.48)	80 (3.15)	100 (3.94)	125 (4.92)	160 (6.30)	200 (7.78)	250* (9.87)
0 mm stroke	0.68	0.88	1.54	1.95	3.15	4.18	6.27	12.49	17.14	36.55
to be added per 3.94 (100mm) stroke	0.31	0.47	0.75	0.78	1.18	1.24	2.02	2.60	3.18	10.70

* not for cylinder type ZH

Dimensions: mm

Tie-Rod Version

Double Acting Cylinder, Single Rod End, Types ZA or ZG



Q= Internal Cushioning Length

Repair Kits

Cylinder Type	Order Code
ZA032/...	VA032/RK
↓	↓
ZA250/...	VA250/RK
ZG032/...	VG032/RK
↓	↓
ZG250/...	VG250/RK

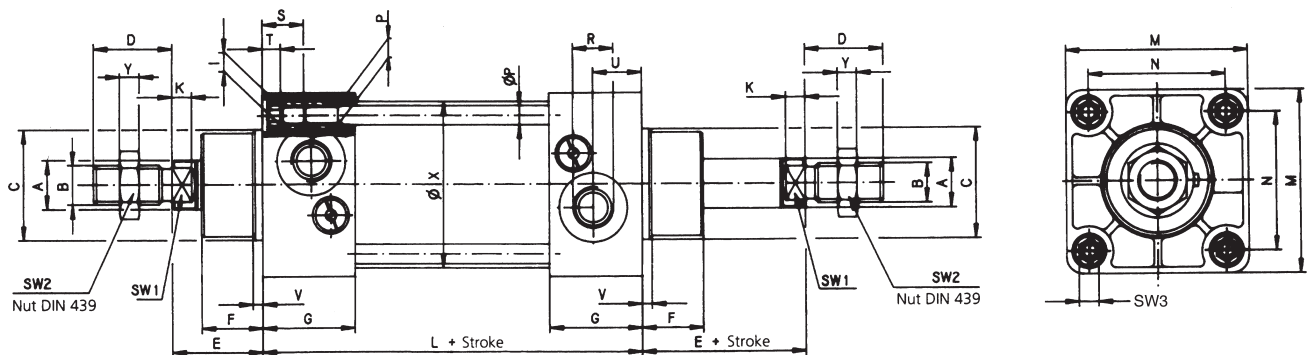
Type	Piston Diameter	A Ø	B	C Ø	D±0.3	E±0.9	F±0.1	G	H	J	K	L	M
ZA; ZG	32	12.0	M10 x 1.25	30.0	22.0	26.0	16.0	33.0	4.0	M6	6.0	94 ± 0.4	47.0
ZA; ZG	40	16.0	M12 x 1.25	35.0	24.0	30.0	20.0	33.5	4.0	M6	6.5	105 ± 0.7	52.0
ZA; ZG	50	20.0	M16 x 1.5	40.0	32.0	37.0	25.0	36.0	4.0	M8	8.0	106 ± 0.7	65.0
ZA; ZG	63	20.0	M16 x 1.5	45.0	32.0	37.0	25.0	38.0	4.0	M8	8.0	121 ± 0.8	75.0
ZA; ZG	80	25.0	M20 x 1.5	45.0	40.0	46.0	30.0	41.5	4.0	M10	10.0	128 ± 0.8	95.0
ZA; ZG	100	25.0	M20 x 1.5	55.0	40.0	51.0	35.0	41.5	4.0	M10	10.0	138 ± 1	115.0
ZA; ZG	125	32.0	M27 x 2	60.0	54.0	65.0	40.0	45.0	5.0	M12	13.0	160 ± 1	140.0
ZA; ZG	160	40.0	M36 x 2	65.0	72.0	80.0	50.0	47.5	8.0	M16	16.0	180 ± 1.1	180.0
ZA; ZG	200	10.0	M36 x 2	75.0	72.0	95.0	65.0	47.5	8.0	M16	16.0	180 ± 1.6	220.0

Type	Piston Diameter	N	P	Q	R	S min.	T	U	V	W	XØ	Y	SW1	SW2	SW3
ZA; ZG	32	32.5 ± 0.5	M6	15	-	16.0	5.0	14.0	4	6.0	36	5	10	17	6
ZA; ZG	40	38.0 ± 0.5	M6	19	G 1/4	16.0	5.0	15.0	4	6.0	45	6	13	19	6
ZA; ZG	50	46.5 ± 0.6	M8	22	-	16.0	6.0	15.0	4	8.0	55	8	16	24	8
ZA; ZG	63	56.5 ± 0.7	M8	30	G 3/8	16.0	6.0	20.0	4	8.0	68	8	16	24	8
ZA; ZG	80	72.0 ± 0.7	M10	30	-	16.0	7.5	20.0	4	10.0	86	10	21	30	10
ZA; ZG	100	89.0 ± 0.7	M10	27	G 1/2	16.0	7.5	25.0	4	10.0	107	10	21	30	10
ZA; ZG	125	110.0 ± 1	M12	27	-	20.0	10.0	30.0	5.5	12.0	132	13.5	27	41	12
ZA; ZG	160	140.0 ± 1	M16	-	G 3/4	24.0	-	27.5	25	16.0	170	18	36	55	-
ZA; ZG	200	175.0 ± 1	M16	39	G 3/4	24.0	-	27.5	25	16.0	210	18	36	55	-

Dimensions: mm

Tie-Rod Version

Double Acting Cylinder, Double Rod End, ZB or ZH



Q= Internal Cushioning Length

Repair Kits

Cylinder Type	Order Code
ZB032/...	VB032/RK
↓	↓
ZB250/...	VB250/RK
ZH032/...	VH032/RK
↓	↓
ZH250/...	VH250/RK

Type	Piston Diameter	A Ø	B	C Ø	D±0.3	E±0.9	F±0.1	G	V	J	K	L	M
ZB; ZH	32	12.0	M10 x 1.25	30.0	22.0	26.0	16.0	33.0	4.0	M6	6.0	94 ± 0.4	47.0
ZB; ZH	40	16.0	M12 x 1.25	35.0	24.0	30.0	20.0	33.5	4.0	M6	6.5	105 ± 0.7	52.0
ZB; ZH	50	20.0	M16 x 1.5	40.0	32.0	37.0	25.0	36.0	4.0	M8	8.0	106 ± 0.7	65.0
ZB; ZH	63	20.0	M16 x 1.5	45.0	32.0	37.0	25.0	38.0	4.0	M8	8.0	121 ± 0.8	75.0
ZB; ZH	80	25.0	M20 x 1.5	45.0	40.0	46.0	30.0	41.5	4.0	M10	10.0	128 ± 0.8	95.0
ZB; ZH	100	25.0	M20 x 1.5	55.0	40.0	51.0	35.0	41.5	4.0	M10	10.0	138 ± 1	115.0
ZB; ZH	125	32.0	M27 x 2	60.0	54.0	65.0	40.0	45.0	5.5	M12	13.0	160 ± 1	140.0
ZB; ZH	160	40.0	M36 x 2	65.0	72.0	80.0	50.0	47.5	25.0	M16	16.0	180 ± 1.1	180.0
ZB; ZH	200	10.0	M36 x 2	75.0	72.0	95.0	65.0	47.5	25.0	M16	16.0	180 ± 1.6	220.0

Type	Piston Diameter	N	P	Y	R	S min.	T	U	ØX	Q	SW1	SW2	SW3
ZB; ZH	32	32.5 ± 0.5	M6	5.0	G 1/8	16.0	5.0	14.0	36.0	15.0	10	17	6
ZB; ZH	40	38.0 ± 0.5	M6	6.0	G 1/4	16.0	5.0	15.0	45.0	19.0	13	19	6
ZB; ZH	50	46.5 ± 0.6	M8	8.0	G 1/4	16.0	6.0	15.0	55.0	22.0	16	24	8
ZB; ZH	63	56.5 ± 0.7	M8	8.0	G 3/8	16.0	6.0	20.0	68.0	30.0	16	24	8
ZB; ZH	80	72.0 ± 0.7	M10	10.0	G 3/8	16.0	7.5	20.0	86.0	30.0	21	30	10
ZB; ZH	100	89.0 ± 0.7	M10	10.0	G 1/2	16.0	7.5	25.0	107.0	27.0	21	30	10
ZB; ZH	125	110.0 ± 1	M12	13.5	G 1/2	20.0	10.0	30.0	132.0	27.0	27	41	12
ZB; ZH	160	140.0 ± 1	M16	18.0	G 3/4	24.0	-	27.5	170.0	34.0	36	55	-
ZB; ZH	200	175.0 ± 1	M16	18.0	G 3/4	24.0	-	27.5	210.0	34.0	36	55	-

Dimensions: mm

Mounting Parts

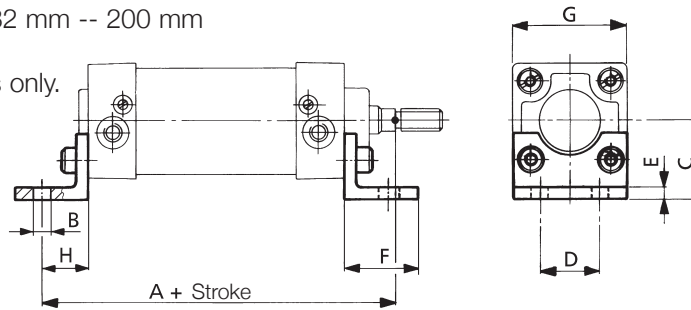
Foot Brackets to VDMA 24562 T.2 (MS1)

for Cylinder with Piston Diameter 32 mm -- 200 mm

Includes bolts

Foot brackets are supplied in pairs only.

Material: Steel



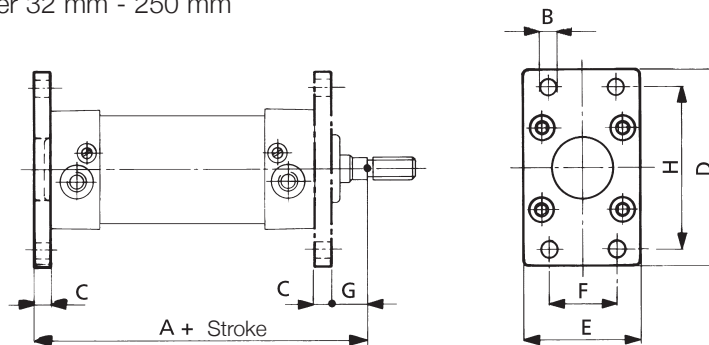
Piston Diameter	A	B Ø H14	C Js15	D Js14	E ± 0.5	F	G-0.2	H±0.2	Each Bracket Weight Approx. (kg)	Order Code
32	144.0	7.0	32.0	32.0	4.0	35.0	45.0	24.0	0.066	P493A3124000A00
40	163.0	9.0	36.0	36.0	4.0	36.0	52.0	28.0	0.078	P493A4124000A00
50	175.0	9.0	45.0	45.0	5.0	47.0	65.0	32.0	0.168	P493A5124000A00
63	190.0	9.0	50.0	50.0	5.0	45.0	75.0	32.0	0.190	P493A6124000A00
80	215.0	12.0	63.0	63.0	6.0	55.0	95.0	41.0	0.382	P493A8124000A00
100	230.0	14.0	71.0	75.0	6.0	57.0	115.0	41.0	0.452	P493A1124000A00
125	270.0	16.0	90.0	90.0	8.0	70.0	140.0	45.0	1.090	P493AP124000A00
160	320.0	18.0	115.0	115.0	10.0	80.0	180.0	60.0	1.188	P493AQ124000A00
200	345.0	22.0	135.0	135.0	12.0	90.0	220.0	70.0	3.450	P493AR124000A00

Front and Rear Flange to VDMA 24562 T.2 (MF1, MF2)

for Cylinder with Piston Diameter 32 mm - 250 mm

Includes bolts

Material: Steel to ISO 6431



Piston Diameter	A	B H13	C ± 0.2	D	E	F Js14	G	H Js14	Weight Approx. (kg)	Order Code
32	130.0	7.0	10.0	80.0	45.0	35.0	16.0	64.0	0.192	P493A3126000A00
40	145.0	9.0	10.0	90.0	52.0	36.0	20.0	72.0	0.250	P493A4126000A00
50	155.0	9.0	12.0	110.0	65.0	45.0	25.0	90.0	0.480	P493A5126000A00
63	170.0	9.0	12.0	120.0	75.0	50.0	25.0	100.0	0.620	P493A6126000A00
80	190.0	12.0	16.0	150.0	95.0	63.0	30.0	126.0	1.415	P493A8126000A00
100	205.0	14.0	16.0	170.0	115.0	75.0	35.0	150.0	1.985	P493A1126000A00
125	245.0	16.0	20.0	205.0	140.0	90.0	45.0	180.0	3.750	P493AP126000A00
160	280.0	18.0	20.0	260.0	180.0	115.0	60.0	230.0	6.350	P493AQ126000A00
200	300.0	22.0	25.0	300.0	220.0	135.0	70.0	270.0	11.300	P493AR126000A00

Dimensions: mm

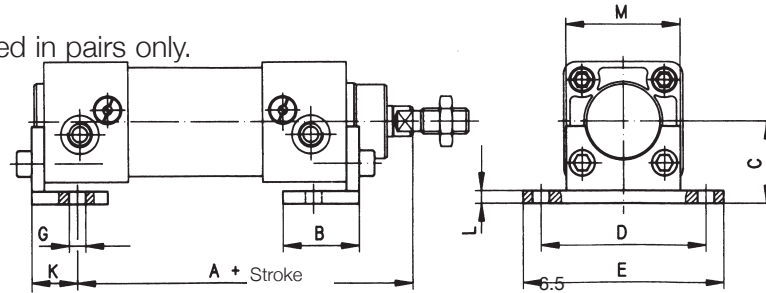
Mounting Parts

Foot Brackets (plain) for Cylinders with Piston Diameter 32 mm to 100 mm

Includes bolts

Foot brackets are supplied in pairs only.

Material: Steel



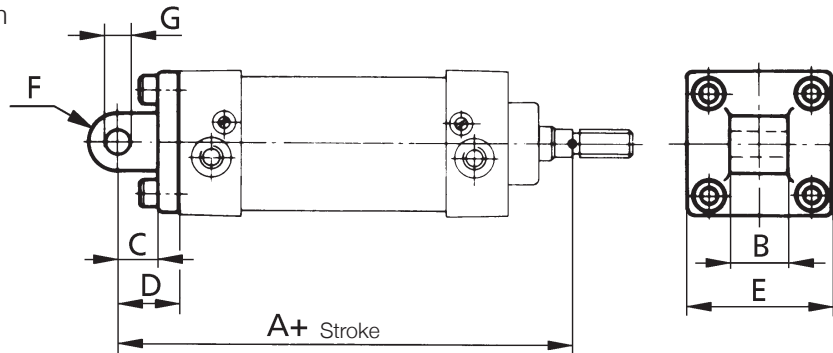
Piston Diameter	A	B H14	C Js15	D Js14	E -0.2	F +1	G±0.2	K±0.3	Each Bracket Weight Approx. (kg)	Order Code
32	107.0	30	32.0	65.0	79.0	30.0	-	18	0.122	VC03/032
40	122.0	30	36.0	75.0	90.0	30.0	6.5	18	0.146	VC03/040
50	127.0	35	45.0	90.0	110.0	35.0	8.5	21	0.218	VC03/050
63	142.0	35	50.0	100.0	120.0	35.0	8.5	21	0.238	VC03/063
80	153.0	45	63.0	128.0	153.0	45.0	10.5	27	0.488	VC03/080
100	168.0	45	71.0	148.0	178.0	45.0	10.5	27	0.580	VC03/100

Oscillating Brackets to VDMA 24562 T.2 (MP4) with Lugs

for Cylinder with Piston Diameter 32 mm to 200 mm

Includes bolts

Material: Aluminum



Piston Diameter	A	B -0.2 -0.6	C	D ±0.1	E	F	G H9	Weight Approx. (kg)	Order Code
32	142.0	26.0	13.0	22.0	45.0	10.0	10.0	0.140	P493A3122100A00
40	160.0	28.0	16.0	25.0	52.0	12.0	12.0	0.230	P493A4122100A00
50	170.0	32.0	16.0	27.0	65.0	12.0	12.0	0.336	P493A5122100A00
63	190.0	40.0	21.0	32.0	75.0	16.0	-	0.546	P493A6122100A00
80	210.0	50.0	22.0	36.0	95.0	16.0	16.0	1.190	P493A8122100A00
100	230.0	60.0	27.0	41.0	115.0	20.0	20.0	1.840	P493A1122100A00
125	275.0	70.0	30.0	50.0	140.0	25.0	25.0	3.550	VC07/125
160	315.0	90.0	35.0	55.0	180.0	25.0	30.0	7.020	VC07/160
200	335.0	90.0	35.0	60.0	220.0	25.0	30.0	9.350	VC07/200

Dimensions: mm

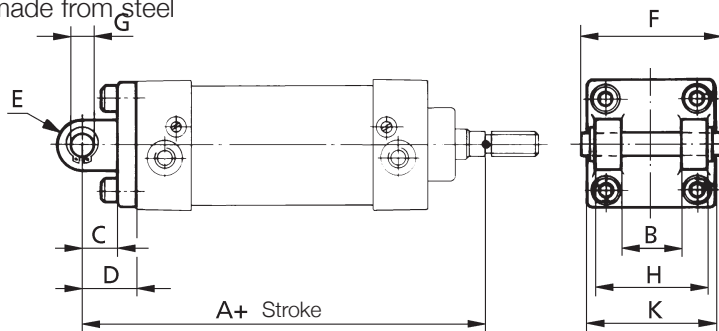
Mounting Parts

Oscillating Brackets to VDMA 24562 T.2 (MP2) Clevis

for Cylinders with Piston Diameter 32 mm to 200 mm

Includes pin and bolts

Material: Aluminum; pin made from steel

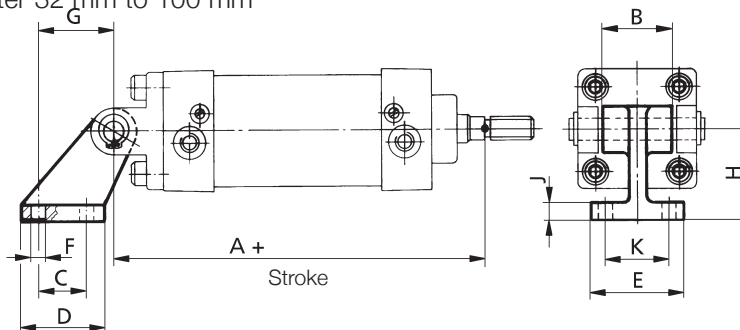


Piston Diameter	A	B H14	C	D ± 0.2	E	F	G H9	H h14	K	Weight Approx. (kg)	Order Code
32	142.0	26.0	13.0	22.0	10.0	53.0	10.0	45.0	45.0	0.140	P493A3121110A00
40	160.0	28.0	16.0	25.0	12.0	60.0	12.0	52.0	52.0	0.230	P493A4121110A00
50	170.0	32.0	16.0	27.0	12.0	68.0	12.0	60.0	65.0	0.336	P493A5121110A00
63	190.0	40.0	21.0	32.0	16.0	78.0	16.0	70.0	75.0	0.546	P493A6121110A00
80	210.0	50.0	22.0	36.0	18.0	98.0	16.0	90.0	95.0	1.190	P493A8121110A00
100	230.0	60.0	27.0	41.0	20.0	118.0	20.0	110.0	115.0	1.840	P493A1121110A00
125	275.0	70.0	30.0	50.0	25.0	139.0	25.0	130.0	140.0	3.550	VC08/125
160	315.0	90.0	35.0	55.0	25.0	178.0	30.0	170.0	180.0	5.750	VC08/160
200	335.0	90.0	35.0	60.0	25.0	178.0	30.0	170.0	220.0	8.900	VC08/200

Right-Angle Articulated Joint to VDMA 24562 T.2 (Cetop RP 107 P)

for Cylinders with Piston Diameter 32 mm to 100 mm

Material: Steel



Piston Diameter	A	B -0.2 -0.6	C Js14	D	E	F Ø	G Js14	H Js15	J	K Js15	Weight Approx. (kg)	Order Code
32	142.0	26.0	18.0	31.0	51.0	6.6	21.0	32.0	8.0	38.0	0.158	P493A3123110A00
40	160.0	28.0	22.0	35.0	54.0	6.6	24.0	36.0	10.0	41.0	0.238	P493A4123110A00
50	170.0	32.0	30.0	45.0	65.0	9	33.0	45.0	12.0	50.0	0.418	P493A5123110A00
63	190.0	40.0	35.0	50.0	67.0	9	37.0	50.0	12.0	52.0	0.526	P493A6123110A00
80	210.0	50.0	40.0	60.0	86.0	11	47.0	63.0	14.0	66.0	1.055	P493A8123110A00
100	230.0	60.0	50.0	70.0	96.0	11	55.0	71.0	15.0	76.0	1.360	P493A1123110A00

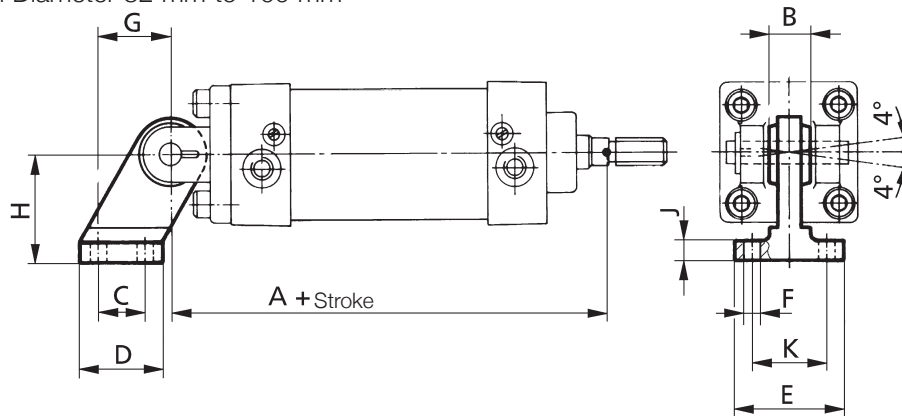
Dimensions: mm

Mounting Parts

Right-Angle Articulated Joint with Spherical Bushing to VDMA 24562 T.2

for Cylinders with Piston Diameter 32 mm to 100 mm

Material: Steel



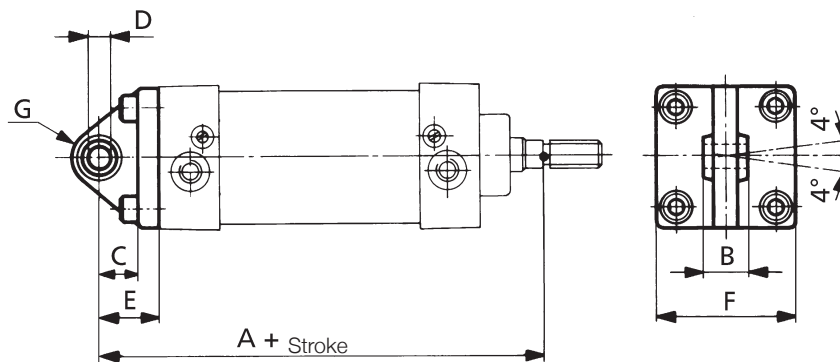
Piston Diameter	A	B -0.1	C Js14	D	E	F Ø	G Js14	H Js15	J	K Js14	Weight Approx. (kg)	Order Code
32	142.0	14.0	18.0	31.0	51.0	6.5	21.0	32.0	8.0	38.0	0.178	P493A3127000A00
40	160.0	16.0	22.0	35.0	54.0	6.5	24.0	36.0	10.0	41.0	0.268	P493A4127000A00
50	170.0	21.0	30.0	45.0	65.0	8.5	33.0	45.0	12.0	50.0	0.458	P493A5127000A00
63	190.0	21.0	35.0	50.0	67.0	8.5	37.0	50.0	12.0	52.0	0.550	P493A6127000A00
80	210.0	25.0	40.0	60.0	86.0	10.5	47.0	63.0	14.0	66.0	0.970	P493A8127000A00
100	230.0	25.0	50.0	70.0	96.0	10.5	55.0	71.0	15.0	76.0	1.326	P493A1127000A00

Oscillating Joint Bracket (Spherical) for Cylinders

with Piston Diameter 32 mm to 100 mm

Includes bolts

Material: Steel



Piston Diameter	A	B -0.1	C	D H7	E Js15	F	G max.	Weight Approx. (kg)	Order Code
32	142.0	14.0	12.0	10.0	22.0	45.0	15.0	0.158	P493A3128000A00
40	160.0	16.0	15.0	12.0	25.0	55.0	18.0	0.254	P493A4128000A00
50	170.0	21.0	17.0	16.0	27.0	65.0	20.0	0.360	P493A5128000A00
63	190.0	21.0	20.0	16.0	32.0	75.0	23.0	0.588	P493A6128000A00
80	210.0	25.0	20.0	20.0	36.0	95.0	27.0	1.118	P493A8128000A00
100	230.0	25.0	25.0	20.0	41.0	115.0	30.0	1.810	P493A1128000A00

Dimensions: mm

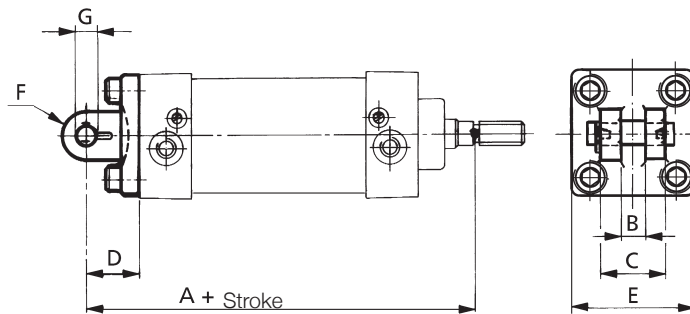
Mounting Parts

Oscillating Brackets to VDMA 24562 T.2, Fork Type Narrow Clevis

for Cylinders with Piston Diameter 32 mm to 100 mm

Includes pin and bolts

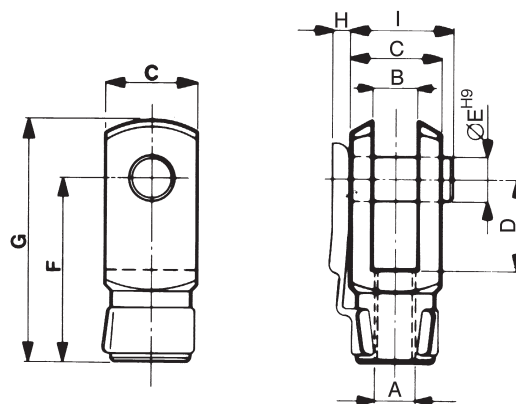
Material: Steel



Piston Diameter	A	B H14	C	D ± 0.2	E	F	G H7	Weight Approx. (kg)	Order Code
32	142.0	14.0	34.0	22.0	45.0	11.0	10.0	0.140	P493A3129000A00
40	160.0	16.0	40.0	25.0	55.0	13.0	12.0	0.230	P493A4129000A00
50	170.0	21.0	45.0	27.0	65.0	18.0	16.0	0.336	P493A5129000A00
63	190.0	21.0	51.0	32.0	75.0	18.0	18.0	0.546	P493A6129000A00
80	210.0	25.0	65.0	38.0	95.0	22.0	20.0	1.190	P493A8129000A00
100	230.0	25.0	75.0	41.0	115.0	22.0	20.0	1.840	P493A1129000A00

Rod Clevis for Cylinders with Piston Diameter 32 mm to 250 mm

Material: galvanized steel



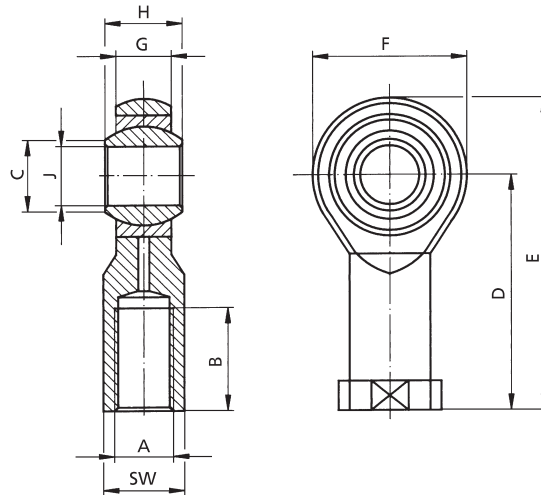
Piston Diameter	A	B	C	D	E Ø	F	G	H	J	Weight Approx. (kg)	Order Code
32	M10 x 1.25	10.0	20.0	20.0	10.0 H9	40.0	52.0	3.0	23.0	0.084	P493A3131000A00
40	M12 x 1.25	12.0	24.0	24.0	12.0 H9	48.0	62.0	4.0	28.0	0.154	P493A4131000A00
50/63	M16 x 1.5	16.0	32.0	32.0	16.0 H9	64.0	83.0	4.0	36.0	0.352	P493A5131000A00
80/100	M20 x 1.5	20.0	40.0	40.0	20.0 H9	80.0	105.0	4.0	44.0	0.520	P493A8131000A00
125	M27 x 2	30.0	55.0	54.0	30.0 H9	110.0	148.0	-	65.0	1.990	P493AP131000A00
160/200	M36 x 2	35.0	70.0	72.0	35.0 H9	144.0	188.0	-	84.0	4.350	P493AQ131000A00

Dimensions: mm

Mounting Parts

Oscillating Clevis for Cylinders with Piston Diameter 32 mm to 200 mm

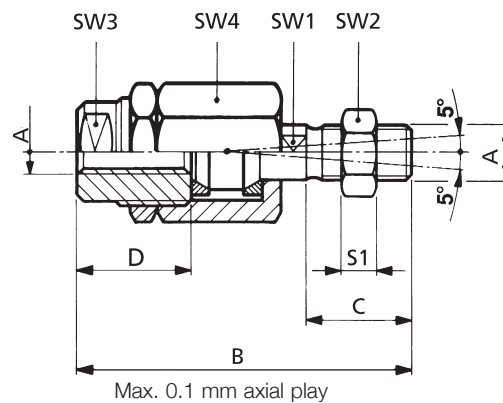
Material: galvanized steel



Piston Diameter	A	B	C Ø	D	E	F	G	H	J Ø H7	SW	Weight Approx. (kg)	Order Code
32	M10 x 1.25	20.0	13.0	43.0	57.0	28.0	10.5	14.0	10.0	17	0.076	P493A3132000A00
40	M12 x 1.25	22.0	15.5	50.0	66.0	32.0	12.0	16.0	12.0	19	0.115	P493A4132000A00
50/63	M16 x 1.5	28.0	19.5	64.0	85.0	42.0	15.0	21.0	16.0	22	0.230	P493A5132000A00
80/100	M20 x 1.5	33.0	24.5	77.0	102.0	50.0	18.0	25.0	20.0	30	0.415	P493A8132000A00
125	M27 x 2	51.0	34.5	110.0	145.0	70.0	25.0	37.0	30.0	41	1.130	P493AP132000A00
160/200	M36 x 2	56.0	37.7	125.0	165.0	80.0	28.0	43.0	35.0	50	1.600	P493AQ132000A00

Alignment Coupler for Cylinders with Piston Diameter 32 mm to 100 mm

Material: galvanized steel



Piston Diameter	A	B	C	D	S1	SW1	SW2	SW3	SW4	Weight Approx. (kg)	Order Code
32	M10 x 1.25	72.0	20.0	26.0	6.0	12	17	19	30	0.210	P493A3134000A00
40	M12 x 1.25	76.5	24.0	26.0	7.0	12	19	19	30	0.215	P493A4134000A00
50/63	M16 x 1.5	108.0	32.0	34.0	8.0	19	24	30	42	0.650	P493A5134000A00
80/100	M20 x 1.5	124.0	40.0	42.0	9.0	19	30	30	42	0.720	P493A8134000A00

Dimensions: mm

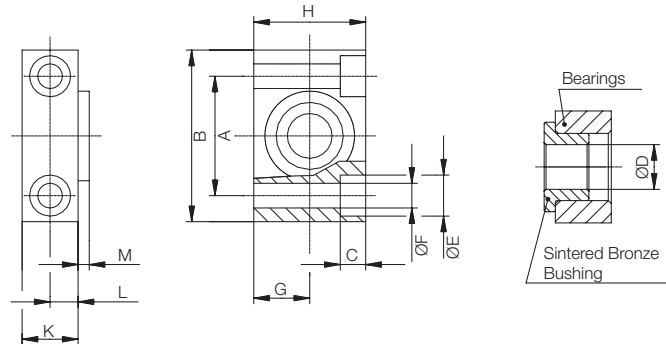
Mounting Parts

Mounting Block for Pivot to VDMA 24562 T.2 Only for Cylinders of Tie-Rod Version

Piston Diameter 32 mm to 200 mm

Mounting blocks are supplied in pairs only

Material: Aluminum; bearing bushing made from sintered bronze

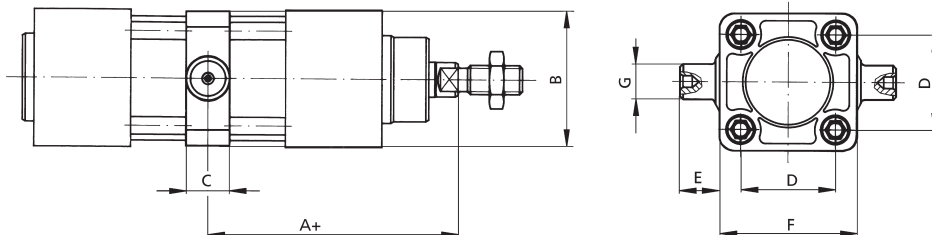


Piston Diameter	A ±0.1	B	C	D Ø H7	E Ø H13	F Ø H13	G ±0.1	H	K	L	M	Weight Approx. (kg)	Order Code
32	32.0	46.0	6.8	12.0	11.0	6.6	15.0	30.0	15.0	7.5	3.0	0.100	P493A3112100A00
40/50	36.0	55.0	9.0	16.0	15.0	9.0	18.0	36.0	18.0	9.0	3.0	0.150	P493A4112100A00
63/80	42.0	65.0	11.0	20.0	18.0	11.0	20.0	40.0	20.0	10.0	3.0	0.234	P493A6112100A00
100/125	50.0	75.0	13.0	25.0	20.0	14.0	25.0	50.0	25.0	12.5	3.5	0.435	P493A1112100A00
160/200	60.0	92.0	17.5	32.0	26.0	18.0	30.0	60.0	36.0	18.5	4.0	0.850	P493AQ112100A00

Pivot to VDMA 24562 T.2 (MT4) Only for Cylinders of Tie-Rod Version

Piston Diameter 32 mm to 200 mm

Material: galvanized steel



Attention: Pivots are mounted on the center of the cylinder tube, dimension A + 1/2 stroke.

When another position is requested please indicate dimension of key surface of piston rod to center of pivot.

Piston Diameter	A	B	C max.	D ± 0.2	E h14	F h14	G Ø e9	Weight Approx. (kg)	Order Code
32	73.0	46.0	15.0	32.5	12.0	50.0	12.0	0.128	ZC09/032-S
40	82.5	59.0	20.0	38.0	16.0	63.0	16.0	0.308	ZC09/040-S
50	90.0	69.0	20.0	46.5	16.0	75.0	16.0	0.370	ZC09/050-S
63	97.5	84.0	25.0	56.5	20.0	90.0	20.0	0.690	ZC09/063-S
80	110.0	102.0	25.0	72.0	20.0	110.0	20.0	0.894	ZC09/080-S
100	120.0	125.0	30.0	89.0	25.0	132.0	25.0	1.584	ZC09/100-S
125	145.0	155.0	32.0	110.0	25.0	160.0	25.0	2.600	ZC09/125-S
160	170.0	190.0	40.0	140.0	32.0	200.0	32.0	4.300	ZC09/160-S
200	185.0	240.0	40.0	175.0	32.0	250.0	32.0	7.450	ZC09/200-S

NOTE: Pivots are fastened strongly to the tie rod ex works. (Please refer to option C09 on page 4). Order codes in the left table are to be used when spare parts are to be ordered.

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.

ISO/VDMA series Switches

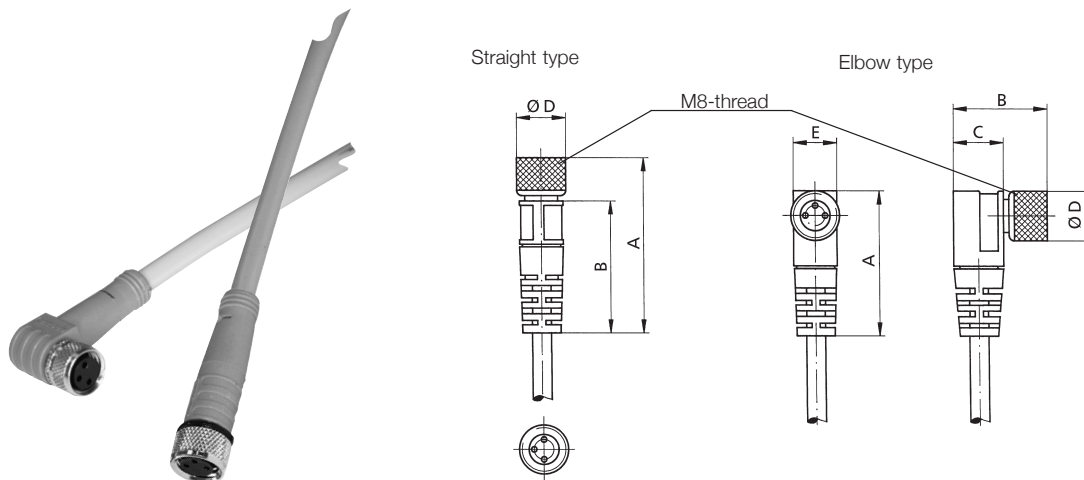
ISO/VDMA series World Switch

Cylinders	Bore		Switches					
			SR6-002	SR6-022	SH6-021	SH6-031	SH6-022	SH6-032
ISO/VDMA series Tie Rod	32-63mm	Bracket	SB6-K01	SB6-K01	SB6-K01	SB6-K01	SB6-K01	SB6-K01
ISO/VDMA series Tie Rod	50-63mm	Bracket	SB6-L01	SB6-L01	SB6-L01	SB6-L01	SB6-L01	SB6-L01
ISO/VDMA series Tie Rod	80-100mm	Bracket	SB6-P01	SB6-P01	SB6-P01	SB6-P01	SB6-P01	SB6-P01
ISO/VDMA series Tie Rod	125mm	Bracket	SB6-T01	SB6-T01	SB6-T01	SB6-T01	SB6-T01	SB6-T01
ISO/VDMA series Tie Rod	160-200mm	Bracket	SB6-W01	SB6-W01	SB6-W01	SB6-W01	SB6-W01	SB6-W01

NOTE: See page 20 for dimensional and technical data

Dimensions: mm

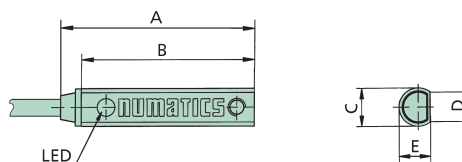
Cords M8-thread for Switches and Sensors with Connector



Type		A	B	C	D	E	Weight (approx. kg)	Order Code
Straight with 5-m-cable	(3x0.25 mm ²)	32.3	24.4	—	9.0	—	0.143	PXCST
Elbow with 5-m-cable	(3x0.25 mm ²)	26.3	17.1	9.2	9.0	8.0	0.145	PXC90

LP Series for Cylinders of Profile Type

ISO 6341/VDMA 24562



Electronic Sensor

(3 Wire Type) (mm)		A	B	C	D	E	Order Code
27 cm cable made from PVC with M8x1 mm plug	(PNP NO)	33.0	29.5	6.5	5.0	5.3	SPR-C02
2 m cable made from PVC, 3x0.14 mm ²	(PNP NO)						SPR-W20
27 cm cable made from PVC with M8x1 mm plug	(NPN NO)						SNR-C02
2 m cable made from PVC, 3x0.14 mm ²	(NPN NO)						SNR-W20

Reed Switch

(2 Wire Type) (mm)		A	B	C	D	E	Order Code
27 cm cable made from PVC with M8x1 mm plug	(PNP NO)	33.0	29.5	6.5	5.0	5.3	SPR-C02
2 m cable made from PVC, 3x0.14 mm ²	(PNP NO)						SPR-W20

Technical Data

Electronic Sensor		Reed Switch	
<p>PNP NO</p>	<p>NPN NO</p>	<p>SRR NO</p>	
Operating Voltage U_B	10-30 V DC	27 cm cable with M8 x 1 mm plug 2 m cable	10-50 V AC/60VDC 10-120 V AC/DC
Residual Ripple	$\leq 10\% U_B$		
Voltage Decrease U_d (with I_a max.)	≤ 2 V		≤ 3 V
Current Absorption (not activated)	≤ 10 mA		
Switching Current I_a	< 150 mA		< 100 mA
Response Sensitivity	approx. 3 mT	approx. 3 mT	
EMV to:	EN 60947-5-2	EN 60947-5-2	
Wire Breakage Protection	Yes	—	
Short Circuit Protection	Yes	—	
Reverse Polarity Protection	Yes	Yes	
Power-Up Pulse Suppression	Yes	—	
Protection to DIN 40050	IP67	IP67	
Shock and Vibration Resistance	30 g, 11 ms, 10 to 55 Hz, 1mm	30 g, 11 ms, 10 to 55 Hz, 1mm	
Ambient Temperature T_a	-10°F to 165°F (-25°C to +75°C)	-10°F to 165°F (-25°C to +75°C)	

- Attention:
- With CD-operation LED only illuminates when switch is correctly polarized.
 - Never operate sensor W/O load.
 - When switching higher capacitive and inductive loads, protection measures are to be taken

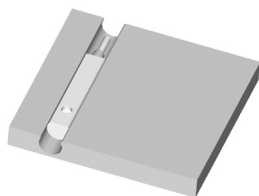
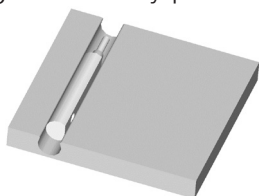
Sensors

Mounting of Switches with LP Profile

1. Put sensor in the cylinder groove at any point.

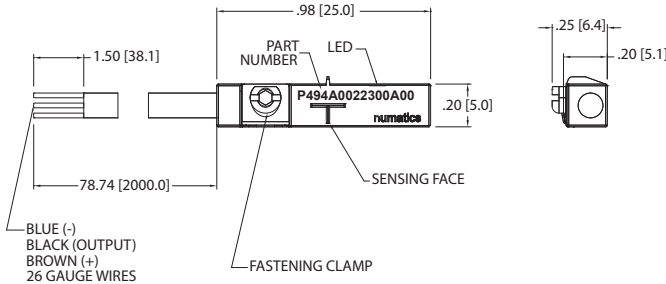
2. Rotate it by 90°.

3. Tighten screw M3 (key 1.5 mm is included).

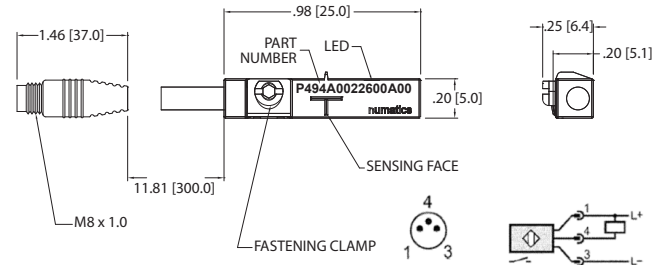


Sensing Part Numbers

P494A0022300A00



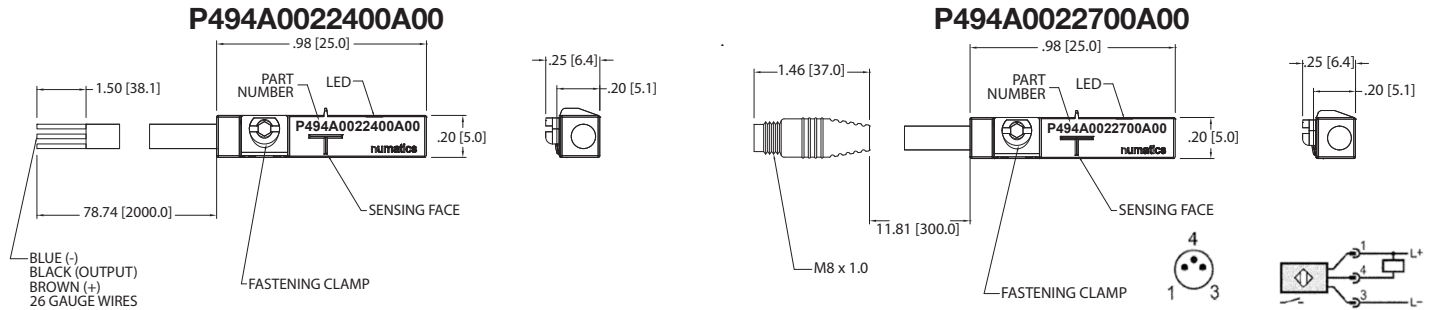
P494A0022600A00



ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE cUL US RoHS

ELECTRICAL DESIGN	DC PNP
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector, Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE cUL US RoHS

Sensing Part Numbers

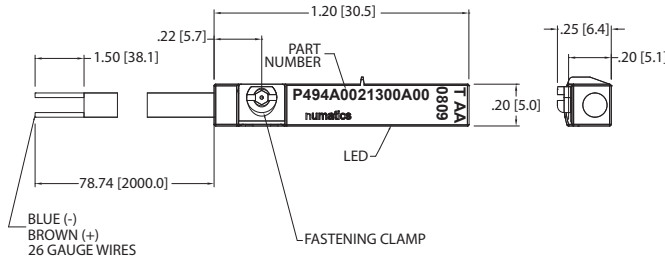


ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 3 x26 Gauge Wire)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE cUL US RoHS

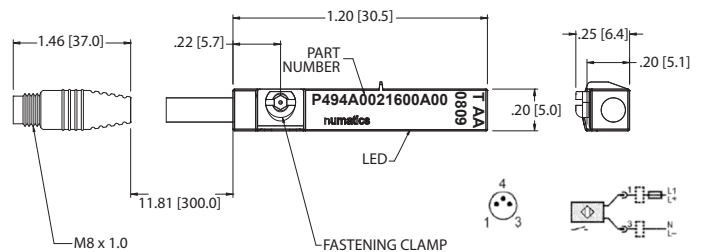
ELECTRICAL DESIGN	DC NPN
OUTPUT	Normally Open
OPERATING VOLTAGE	10-30 VDC
CURRENT RATING	100 mA
SHORT-CIRCUIT PROTECTION	Yes
OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 2.5 V
CURRENT CONSUMPTION	< 12 mA
REPEATABILITY	< .2mm
POWER-ON DELAY TIME	< 30 ms
SWITCH FREQUENCY	> 3000 Hz
AMBIENT TEMPERATURE	-25°C to 85°C
PROTECTION	IP 67, III
HYSTERESIS	1.0mm
MAGNETIC SENSITIVITY	2.0 mT
TRAVEL SPEED	> 10 m/s
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector, Pur Cable (.3 m)
REMARKS	Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5 cULus - Class 2 Source Required
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	CE cUL US RoHS

Sensing Part Numbers

P494A0021300A00
P4995051740N001



P494A0021600A00
P4995058110N001

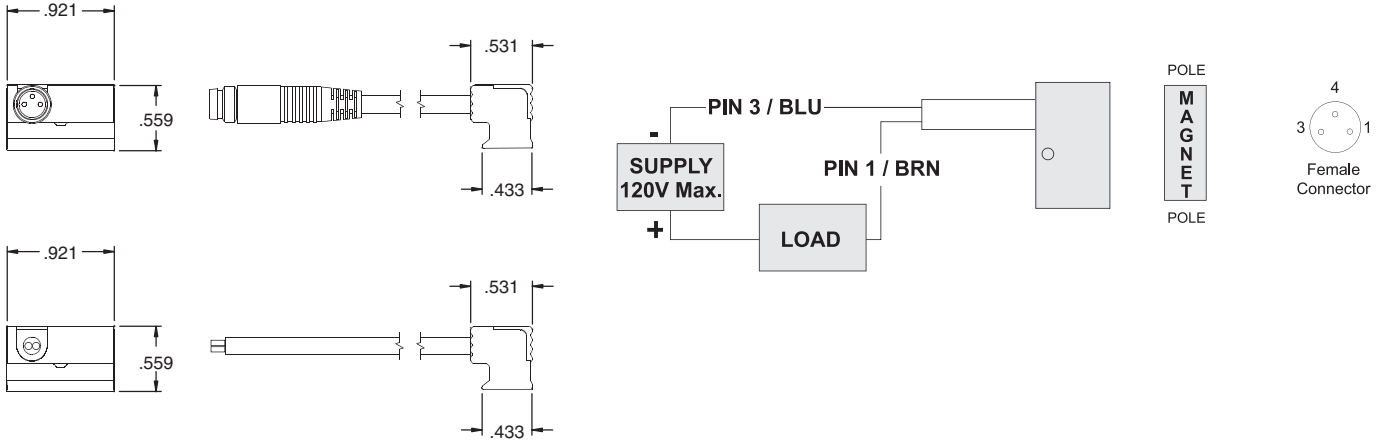


ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	5-120 VAC/DC
CURRENT RATING	100 mA*
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	Flying Leads, Pur Cable (2m Long, 2 x26 Gauge Wire)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

ELECTRICAL DESIGN	AC/DC REED
OUTPUT	Normally Open
OPERATING VOLTAGE	5-60 VDC / 5-50 VAC #
CURRENT RATING	100 mA*
SHORT-CIRCUIT PROTECTION	No
OVERLOAD PROTECTION	No
REVERSE POLARITY PROTECTION	Yes
VOLTAGE DROP	< 5 V
REPEATABILITY	± .2mm
MAKETIME INCLUDING BOUNCE	< .6 ms
BREAKTIME	< .1 ms
SWITCHING POWER (MAX)	5 W
SWITCH FREQUENCY	1000 Hz
AMBIENT TEMPERATURE	-25°C to 70°C
PROTECTION	IP 67, II
HYSTERESIS	.9mm
HOUSING MATERIAL	PA (Polyamide) Black; Fastening Clamp: Stainless Steel
FUNCTION DISPLAY SWITCHING STATUS	Yellow LED
CONNECTION	M8 Connector, Pur Cable (.3m)
REMARKS	*External Protective Circuit for Inductive Load (Valve, Contactor, Etc..) Necessary. Conforms to 2008 NEC Section 725 III, Class 2 Circuits # M8 Connector voltage limited to 5-60 VDC/ 5-50 VAC to conform with 2008 IEC 61076-2-104 Clamping Screw with Combined Slot/Hexagon Socket Head AF 1.5. No LED Function in case of Polarity in DC Operation
ACCESSORIES	Rubber Placeholder, Cable Clip, and Cut Sheet To Be Provided with Every Switch
AGENCY APPROVALS	

World Switches

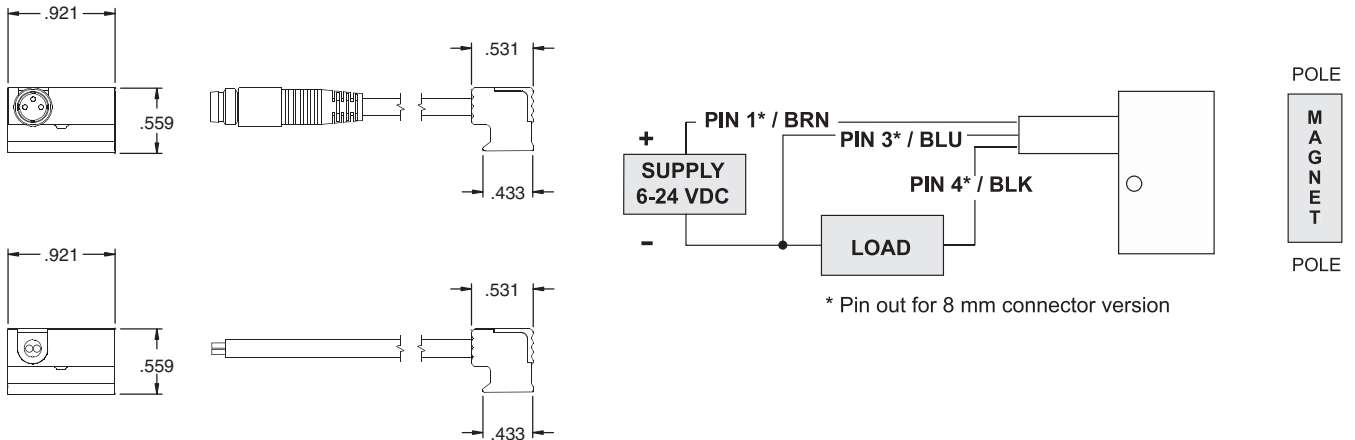
Reed Switch - Normally Open Type SR6



ISO/VDMA Series World Switch Reed Switch Part Numbers

P/N	Switch Style	Electrical Design	Output	Operating Voltage	Current Rating	Switching Power	Voltage Drop	NEMA IP Rating	Temperature Rating
SH6-002	Flying Lead	AC/DC REED	Normally Open	5-120 VAC/DC	0.025 Amps Max. 0.001 Amps Min.	3 Watts Max.	3.5 Volts	NEMA 6	-25° to +75° C
SR6-004	Flying Lead	AC/DC REED	Normally Open	5-120 VAC/DC	0.5 Amps Max. 0.005 Amps Min.	10 Watts Max.	3.0 Volts	NEMA 6	-25° to +75° C
SR6-022	M8 Connector	AC/DC REED	Normally Open	5-50 VAC 5-60 VDC	0.025 Amps Max. 0.001 Amps Min.	12 Watts Max.	.5 Volts	NEMA 6	-25° to +75° C
SR6-024	M8 Connector	AC/DC REED	Normally Open	5-50 VAC 5-60 VDC	0.5 Amps Max. 0.005 Amps Min.	10 Watts Max.	3.0 Volts	NEMA 6	-25° to +75° C

Hall Effect Switch - Sourcing/Sinking Type SH6

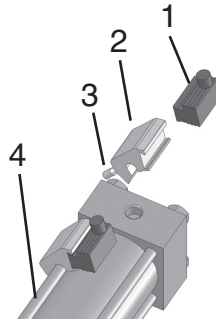


ISO/VDMA Series World Switch Hall Effect Part Numbers

P/N	Switch Style	Electrical Design	Output	Operating Voltage	Current Rating	Switching Power	Voltage Drop	NEMA IP Rating	Temperature Rating
SH6-031	Flying Lead	PNP	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25° to +75° C
SH6-032	Flying Lead	NPN	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25° to +75° C
SH6-021	M8 Connector	PNP	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25° to +75° C
SH6-022	M8 Connector	NPN	Normally Open	6-24 VDC	0.3 Amps Max.	7.2 Watts Max.	.5 Volts	NEMA 6	-25° to +75° C

Original ISO/VDMA series World application Detail**Round Tube and Tie Rod Detail**

1. World Switch
2. Tie Rod Bracket
3. Adjustment Screw
4. Cylinder Tie Rod



numatics®

World Class Supplier of Pneumatic Components



World Headquarters

USA Numatics, Incorporated

46280 Dylan Drive
Novi, Michigan 48377

P: 248-596-3200
F: 248-596-3201

Canada Numatics, Ltd

P: 519-758-2700
F: 519-758-5540

México - Ascomatica SA de CV

P: 52 55 58 09 56 40 (DF y Area metropolitana)
P: 01 800 000 ASCO (2726) (Interior de la República)
F: 52 55 58 09 56 60

Brazil Ascoval Ind.e Comercio Ltda

P: (55) 11-4208-1700
F: (55) 11-4195-3970