

Technical details

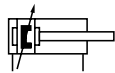
Operating pressure	1 ... 10 bar
Temperature range	-20°C ... +80°C (0 ... +150°C for high temperature version)
Max. stroke	1000 mm
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Alternatively the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Materials	Cylinder tube: AISI 304 (1.4301) or AISI 316 (1.4401) End caps: AISI 304 (1.4301) or AISI 316 (1.4401) Piston rod: AISI 304 (1.4301) or AISI 316 (1.4401) Seals: PU, NBR, PBT, PTFE

Cylinders in accordance with 2014/34/EU (ATEX) available. (Chapter 13)



Double acting pneumatic cylinder with adjustable cushions and magnetic piston for proximity sensors.

Versions

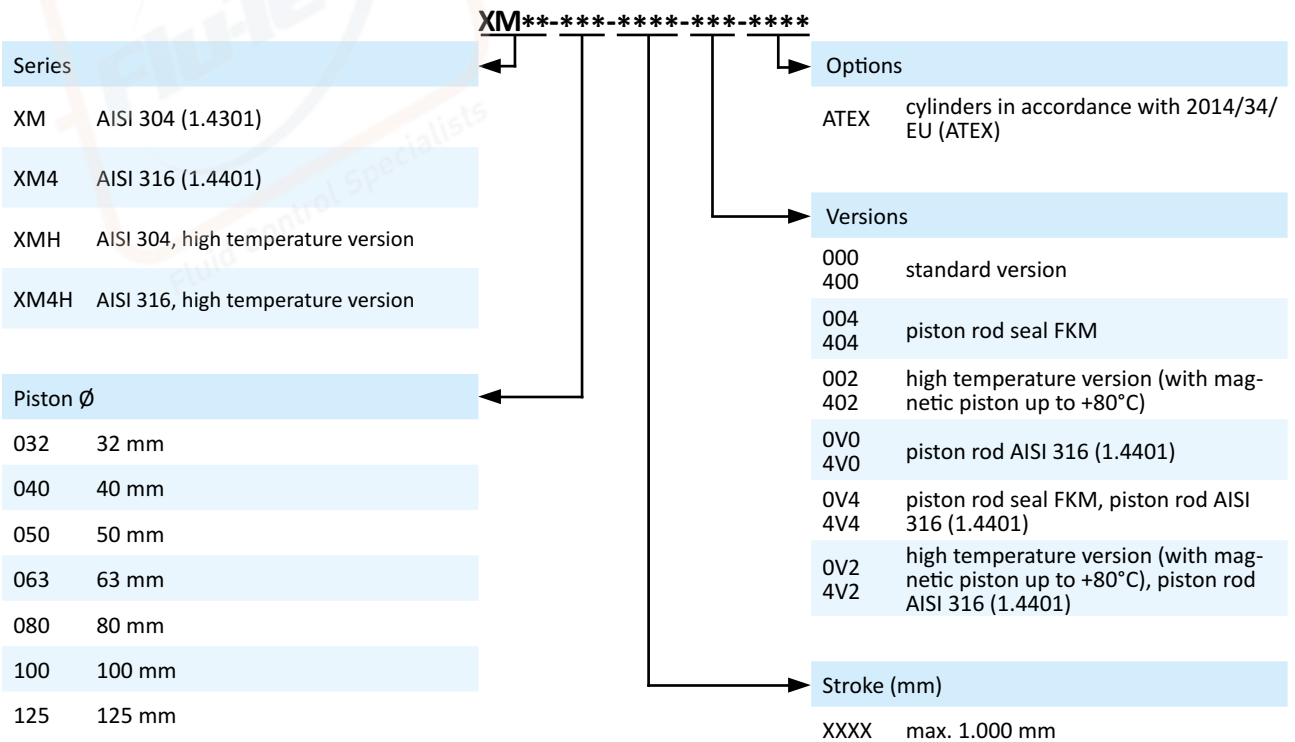


000, 002, 004, 0V0, 0V2, 0V4
double acting, adjustable cushioning,
with magnetic piston



400, 403, 404, 4V0, 4V2, 4V4
double acting, double end piston rod, adjustab-
le cushioning, with magnetic piston

Order code



Not all combinations are possible and available.

Series XM

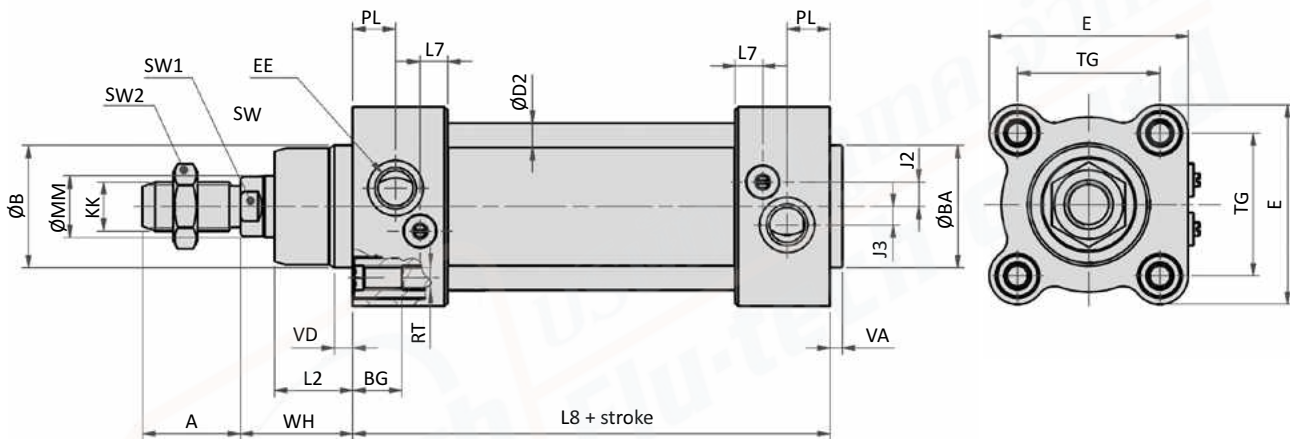
ISO 1552, double acting



Technical data

Model-no.:	XM-032-...	XM-040-...	XM-050-...	XM-063-...	XM-080-...	XM-100-...	XM-125-...
Piston \varnothing (mm)	32	40	50	63	80	100	125
Force at 6 bar (N)	Extension	434	678	1060	1682	2713	4239
	Retraction	373	570	890	1513	2448	3974
Connection	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2
Piston rod thread	M10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M27 x 2
Cushioning length (mm)	20	22	25	25	35	35	35

Dimensions series XM (Versions: -000 and -010)

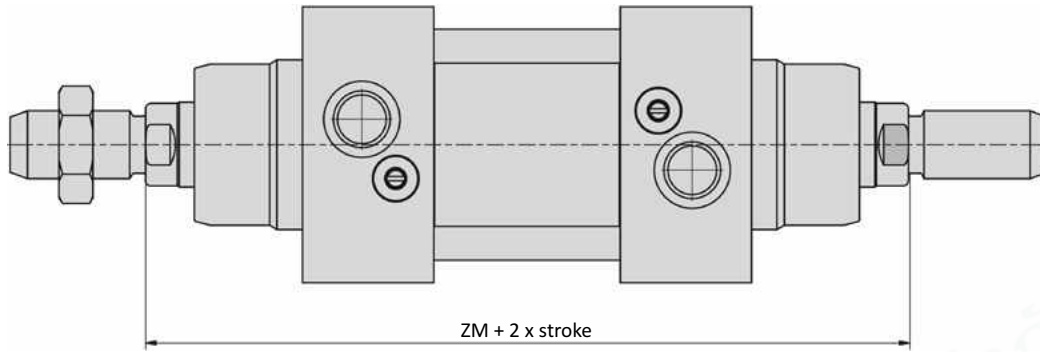


Piston \varnothing	A	$\varnothing B$	$\varnothing BA$	BG	$\varnothing D2$	E	EE	J2	J3	KK	L2
32	22	30	30	16	6	48	G1/8	6.6	5.3	M10 x 1.25	18
40	24	35	35	16	6	52	G1/4	8.5	5	M12 x 1.25	22
50	32	40	40	16	8	65	G1/4	8	6	M16 x 1.5	25.5
63	32	45	45	16	8	75	G3/8	10	6.5	M16 x 1.5	26
80	40	45	45	18	10	95	G3/8	8	8	M20 x 1.5	32
100	40	55	55	18	10	115	G1/2	15	7	M20 x 1.5	38
125	54	60	60	20	12	140	G1/2	13	7	M27 x 2	46

Piston \varnothing	L7	L8	$\varnothing MM$	PL	RT	SW1	SW2	TG	VA	VD	WH
32	7.2	94	12	13	M6	10	17	32.5	4	5	26
40	9.2	105	16	14	M6	13	19	38	4	5	30
50	9	106	20	14	M8	17	24	46.5	4	6	37
63	9.5	121	20	16	M8	17	24	56.5	4	6	37
80	11	128	25	16	M10	22	30	72	4	7	46
100	12	138	25	18	M10	22	30	89	4	7	51
125	12	160	32	18	M12	27	41	110	6	10	65

Piston \varnothing (mm)	32	40	50	63	80	100	125
Weight (kg)	0.960	1.455	2.370	2.550	6.030	9.420	14.550
each 100 mm stroke	0.240	0.290	0.430	0.480	1.050	1.200	2.200

Dimensions series XM (addition at double end piston rod)

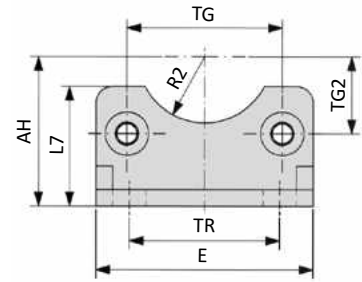
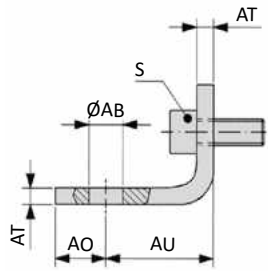


Piston Ø (mm)	32	40	50	63	80	100	125
ZM	146	165	180	195	220	240	290
Piston Ø (mm)	32	40	50	63	80	100	125
Weight (kg)							
0 mm stroke	1.086	1.615	2.677	3.930	6.561	10.180	15.868
each 100 mm stroke	0.330	0.480	0.810	0.850	1.440	1.930	2.920

Series XM
Mounting accessories



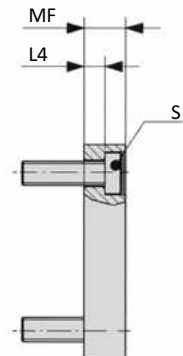
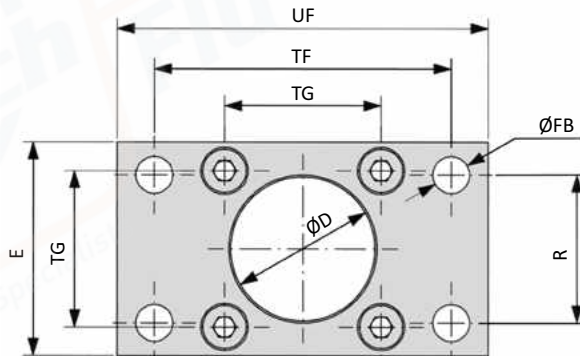
CXM-xxx-01 Foot mount



Model-no.:	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
CXM-032-01	7	32	11	24	4	45	30	15	M6 x 20	32.5	16.25	32
CXM-040-01	10	36	8	28	4	52	30	17.5	M6 x 20	38	19	36
CXM-050-01	10	45	15	32	5	65	36	20	M8 x 20	46.5	23.25	45
CXM-063-01	10	50	13	32	5	75	35	22.5	M8 x 20	56.5	28.25	50
CXM-080-01	12	63	14	41	6	95	47	22.5	M10 x 20	72	36	63
CXM-100-01	14.5	71	16	41	6	115	53	27.5	M10 x 20	89	44.5	75
CXM-125-01	16.5	90	25	45	8	140	70	30	M12 x 25	110	55	90

material: stainless steel AISI 304 (1.4301); 2 x 2 screws in accordance with EN ISO 4762 are included

CXM-xxx-02 Flange mount



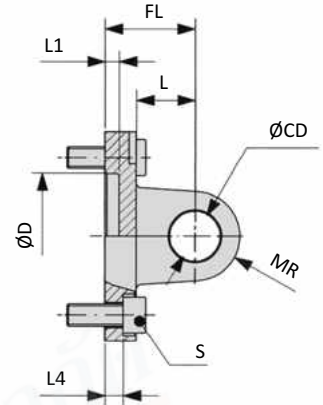
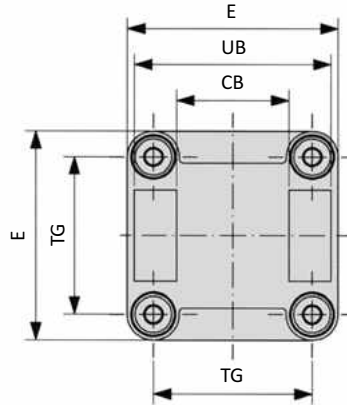
Model-no.:	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
CXM-032-02	30	45	7	5	10	32	M6 x 20	64	32.5	80
CXM-040-02	35	52	9	5	10	36	M6 x 20	72	38	90
CXM-050-02	40	65	9	6.5	12	45	M8 x 20	90	46.5	110
CXM-063-02	45	75	9	6.5	12	50	M8 x 20	100	56.5	120
CXM-080-02	45	95	12	9	16	63	M10 x 25	126	72	150
CXM-100-02	55	115	14	9	16	75	M10 x 25	150	89	170
CXM-125-02	60	140	16	10.5	20	90	M12 x 25	180	110	205

material: stainless steel AISI 304 (1.4301); 2 x 2 screws in accordance with DIN 7984 are included

CXM-xxx-03 Clevis mount



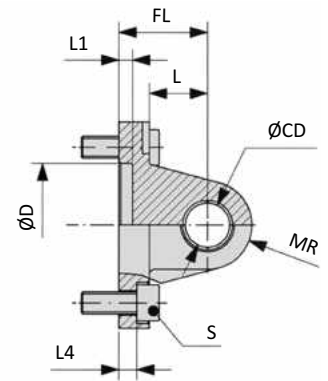
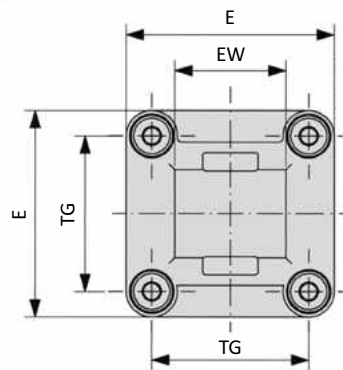
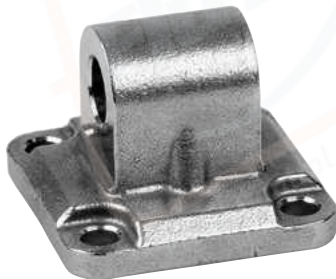
Inclusive clevis pin
order no: **CXM-xxx-38**



Model-no.:	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
CXM-032-03	26	10	30	45	22	13	5	5.5	10	M6 x 20	32.5	45
CXM-040-03	28	12	35	52	25	16	5	5.5	12	M6 x 20	38	52
CXM-050-03	32	12	40	65	27	16	5	6.5	12	M8 x 20	46.5	60
CXM-063-03	40	16	45	75	32	21	5	6.5	16	M8 x 20	56.5	70
CXM-080-03	50	16	45	95	36	22	5	10	16	M10 x 25	72	90
CXM-100-03	60	20	55	115	41	27	5	10	20	M10 x 25	89	110
CXM-125-03	70	25	60	140	50	30	7	10	25	M12 x 25	110	130

material: stainless steel AISI 304 (1.4301); 4 screws in accordance with EN ISO 4762 are included

CXM-xxx-05 Swivel mount



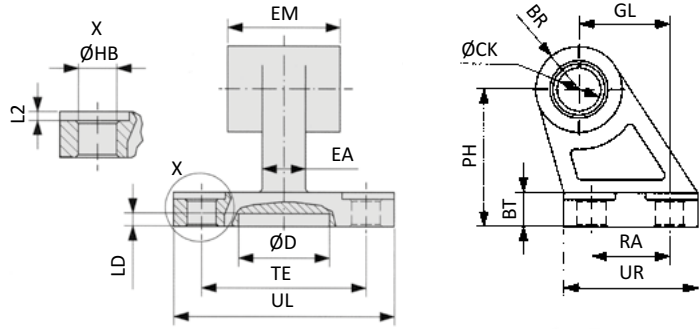
Model-no.:	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
CXM-032-05	10	30	45	26	22	13	5	5.5	10	M6 x 20	32.5
CXM-040-05	12	35	52	28	25	16	5	5.5	12	M6 x 20	38
CXM-050-05	12	40	65	32	27	16	5	6.5	12	M8 x 20	46.5
CXM-063-05	16	45	75	40	32	21	5	6.5	16	M8 x 20	56.5
CXM-080-05	16	45	95	50	36	22	5	10	16	M10 x 25	72
CXM-100-05	20	55	115	60	41	27	5	10	20	M10 x 25	89
CXM-125-05	25	60	140	70	50	30	7	10	25	M12 x 25	110

material: stainless steel AISI 304 (1.4301); 4 screws in accordance with EN ISO 4762 are included

Series XM
Mounting accessories



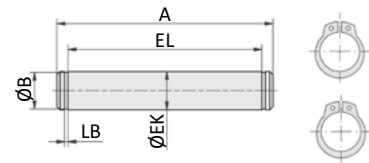
CXM-xxx-06 Swivel mount 90°



Model-no.:	BR	BT	ØCK	Ø D	EA	EM	GL	ØHB	L2	LD	PH	RA	TE	UL	UR
CXM-032-06	10	8	10	21	10	26	21	6.6	1.6	3	32	18	38	51	31
CXM-040-06	11	10	12	21	15	28	24	6.6	1.6	3	36	22	41	54	35
CXM-050-06	13	12	12	21	16	32	33	9	1.6	3	45	30	50	65	45
CXM-063-06	15	14	16	21	16	40	37	9	1.6	3	50	35	52	67	50
CXM-080-06	15	14	16	21	20	50	47	11	2.5	3	63	40	66	86	60
CXM-100-06	19	17	20	11	20	60	55	11	2.5	3	71	50	76	96	70
CXM-125-06	22.5	20	25	21	30	70	70	14	3.2	3	90	60	94	124	90

material: stainless steel AISI 304 (1.4301)

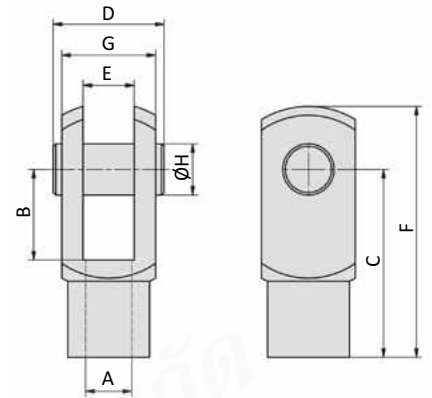
CXM-xxx-08 Clevis pin



Model-no.:	A	Ø B	Ø EK	EL	LB
CXM-032-08	53	9.6	10	46	1.1
CXM-040-08	60	11.5	12	53	1.1
CXM-050-08	68	11.5	12	61	1.1
CXM-063-08	78	15.2	16	71	1.1
CXM-080-08	98	15.2	16	91	1.1
CXM-100-08	118	19	20	111	1.3
CXM-125-08	139	23.9	25	132*	1.3

material: stainless steel AISI 304 (1.4301); 2 snap rings are included

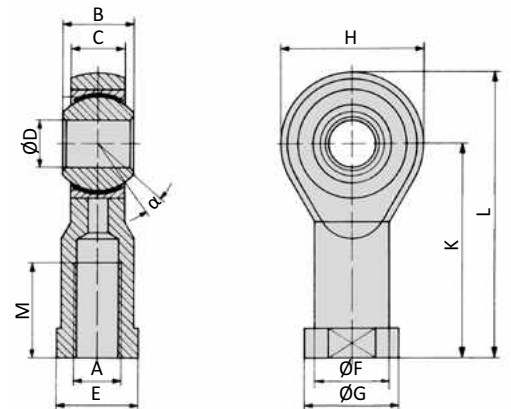
PD-xx Rod clevis



Model-no.:	for cylinder	A	B	C	D	E	F	G	Ø H
PD-25	XM-032	M10 x 1.25	20	40	26	10	52	20	10
PD-40	XM-040	M12 x 1.25	24	48	32	12	62	24	12
PD-63	XM-050, XM-063	M16 x 1.5	32	64	40	16	83	32	16
PD-80	XM-080, XM-100	M20 x 1.5	40	80	50	20	105	40	20

material: stainless steel AISI 303 (1.4305)

PO-xx Rod eye

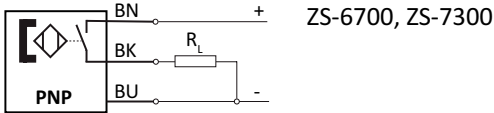
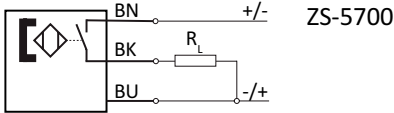
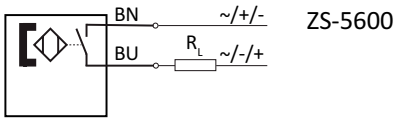


Model-no.:	for cylinder	A	B	C	Ø D	E	Ø F	Ø G	H	K	L	M	α
PO-25	XM-032	M10 x 1.25	14	10.5	10	17	15	19	28	43	57	20	13°
PO-40	XM-040	M12 x 1.25	16	12	12	19	17.5	22	32	50	66	22	13°
PO-63	XM-050, XM-063	M16 x 1.5	21	15	16	22	22	27	42	64	85	28	15°
PO-80	XM-080, XM-100	M20 x 1.5	25	18	20	30	27.5	34	50	77	102	33	14°

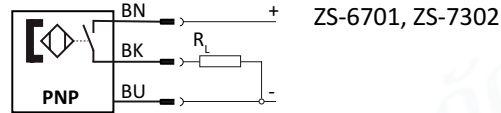
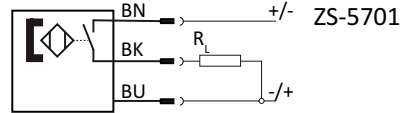
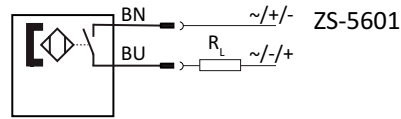
materials: stainless steel AISI 331 (1.4057), bearing stainless steel AISI 316 Ti, PTFE coated, bushing stainless steel AISI 420 (1.4034)

Series ZS Proximity sensors

Proximity sensors with cable



Proximity sensors with plug



Technical data

Model-no.:	ZS-5600	ZS-5601	ZS-5700	ZS-5701
Design	2-pole Reed sensor	2-pole Reed sensor	3-pole Reed sensor	3-pole Reed sensor
Contact function	NO	NO	NO	NO
Rated operational voltage	5 ... 240 V AC / DC	5 ... 60 V AC / DC	5 ... 30 V DC	5 ... 30 V DC
Rated operational current I_e	3 ... 100 mA	3 ... 100 mA	≤ 500 mA	≤ 500 mA
Max. voltage drop at I_e	≤ 2.5	≤ 2.5	≤ 0.1	≤ 0.1
Breaking capacity	10 W	10 W	10 W	10 W
Cable length	3 m	0.3 m with M8 connection	5 m	0.3 m with M8 connection
Temperature range	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C
Protection	IP 67	IP 67	IP 67	IP 67
Switching status indication	LED red	LED red	LED yellow	LED yellow

Model-no.:	ZS-6700	ZS-6701	ZS-7300	ZS-7302
Design	3-pole inductive	3-pole inductive	3-pole inductive	3-pole inductive
Contact function	NO	NO	NO	NO
Output	PNP	PNP	PNP	PNP
Rated operational voltage	5 ... 30 V DC	5 ... 30 V DC	10 ... 30 V DC	10 ... 30 V DC
Rated operational current I_e	≤ 200 mA	≤ 200 mA	≤ 100 mA	≤ 100 mA
Max. voltage drop at I_e	≤ 1.0	≤ 1.0	≤ 2.5	≤ 2.5
Breaking capacity	6 W	6 W	3 W	3 W
Cable length	3 m	0.3 m with M8 connection	6 m	0.3 m with M12 connection
Temperature range	-10 ... +70°C	-10 ... +70°C	-20 ... +60°C	-20 ... +60°C
Protection	IP 67	IP 67	IP 67	IP 67
Switching status indication	LED green	LED green	LED yellow	LED yellow
	-	-	II 3G Ex nA T4 II 3D Ex tD A22 IP67 T 125°C	II 3D Ex tc IIIC T125°C Dc X


Cable with bushing for proximity sensors

Model-no.:	KA-30	KA-50	KA-51	KA-100	KA-101
Connection	M8, snap-in	M8, snap-in	M8, snap-in	M8, snap-in	M8, snap-in
Version	straight	straight	elbow 90°	straight	elbow 90°
Cable length	3 m	5 m	5 m	10 m	10 m

Mounting

For this cylinder series separate mounting brackets are necessary for the sensor mounting.

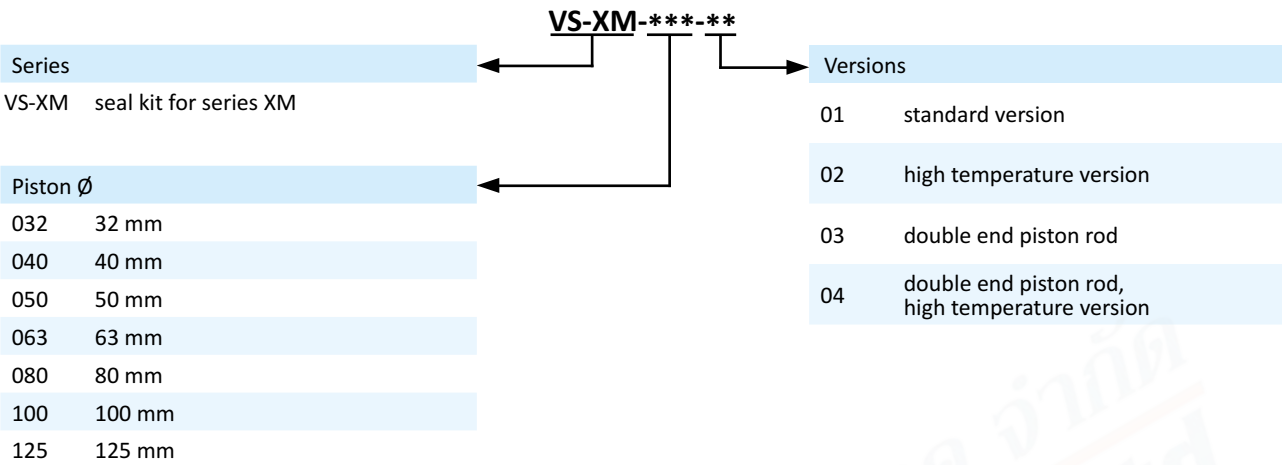
Mounting brackets for proximity sensors

Model-no.:	NT-250
	
Design	Sensor mounting

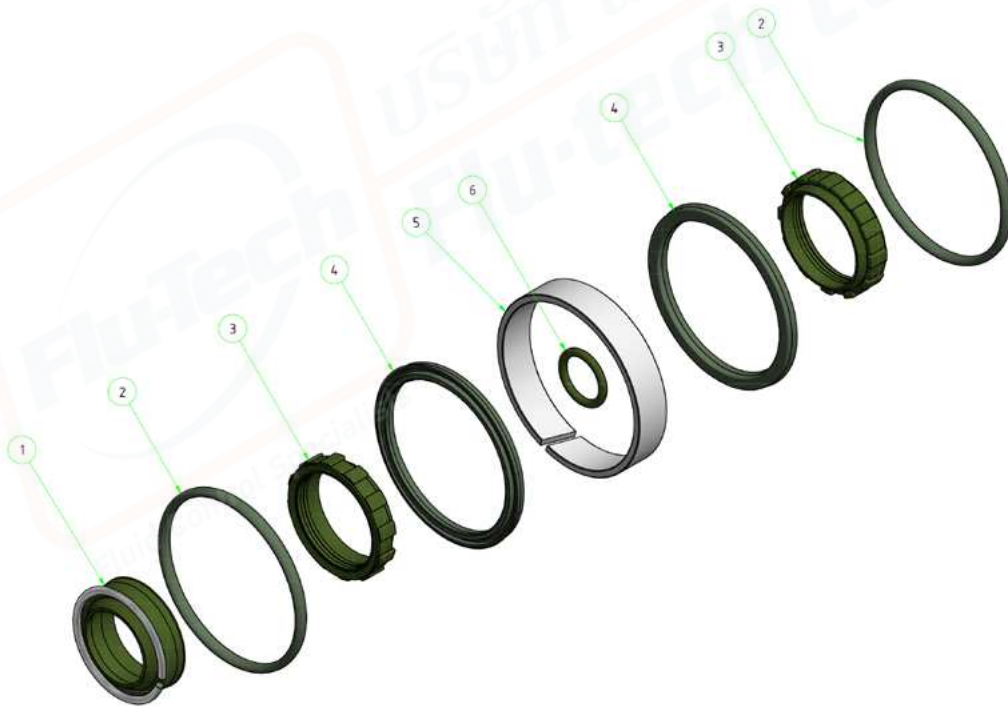
Series XM

Seal kits

Order code



Content



Standard version

Position	Part	Quantity
1	piston rod seal (PUR)	1*
2	O-ring, cap (NBR)	2
3	cushion seal (PUR)	2
4	piston seal (NBR)	2
5	guide ring (PBT)	1
6	O-ring, piston (NBR)	1
7	grease	1

*2 pieces for version 03

High temperature version

Position	Part	Quantity
1	piston rod seal (FKM) + circlip	1*
2	O-ring, cap (FKM)	2
3	cushion seal (FKM)	2
4	piston seal (FKM)	2
5	guide ring (PBT)	1
6	O-ring, piston (FKM)	1
7	grease	1

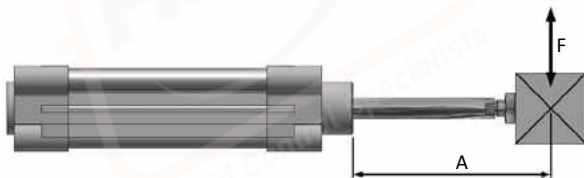
*2 pieces for version 04

Air consumption cylinder (NI for a single stroke of 100 mm, based upon extension)

Piston-Ø	Pressure in bar						
	2	3	4	5	6	7	8
32	0,24	0,32	0,40	0,48	0,56	0,64	0,72
40	0,38	0,50	0,63	0,75	0,88	1,01	1,13
50	0,59	0,79	0,98	1,18	1,37	1,57	1,77
63	0,94	1,25	1,56	1,87	2,18	2,49	2,81
80	1,51	2,01	2,51	3,02	3,52	4,02	4,52
100	2,36	3,14	3,93	4,71	5,50	6,28	7,07
125	3,72	4,96	6,21	7,42	8,64	9,91	11,14

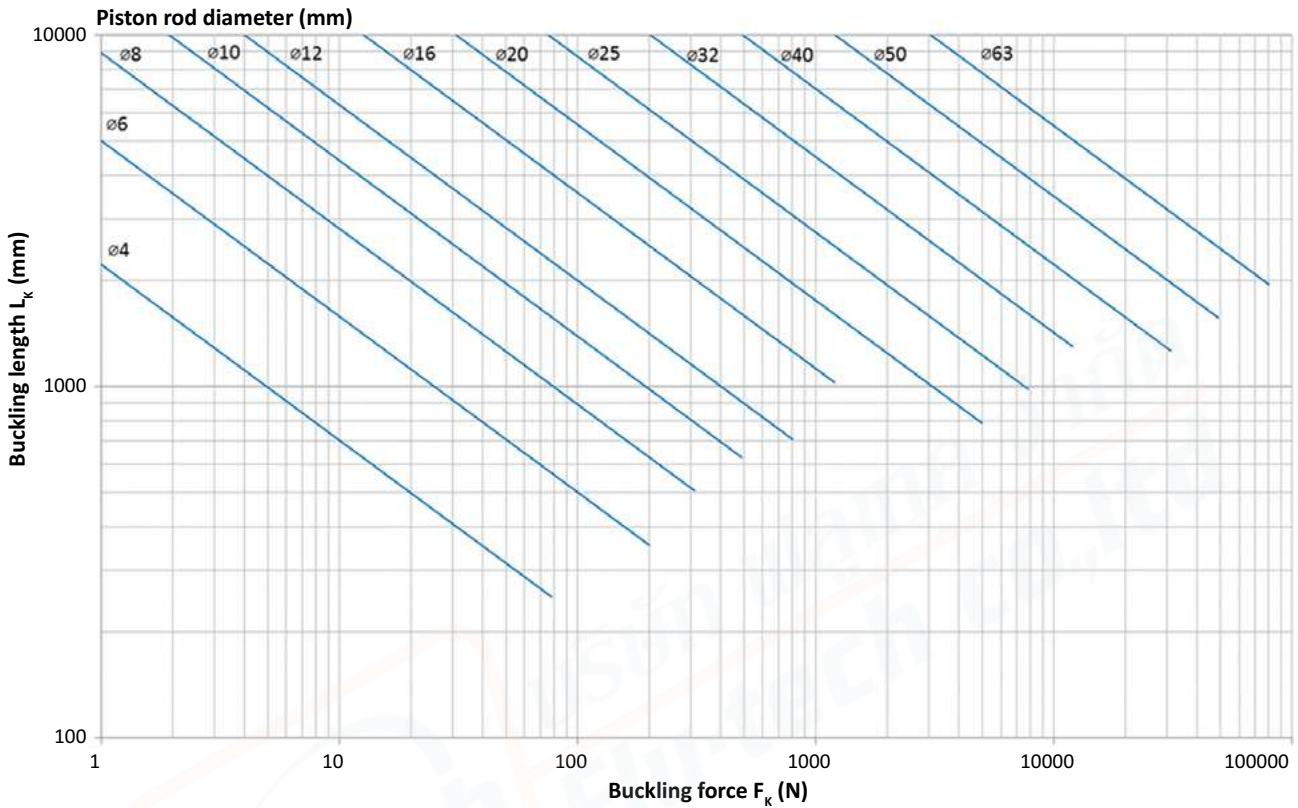
Required flow rate (NI/min at p = 6 bar)

Piston-Ø	speed (m/s)				
	0,25	0,5	1	1,5	2
32	84	169	338	506	675
40	132	264	528	791	1055
50	206	412	824	1236	1649
63	327	654	1309	1963	2617
80	528	1055	2110	3165	4220
100	824	1649	3297	4946	6594
125	1288	2576	5152	7727	10303

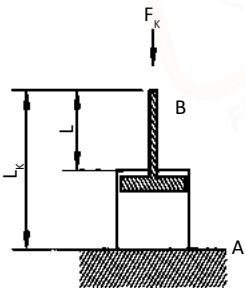
Permissible side load F (N)


Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75	55	50	40	34	28	23	20	16	12	9	7
40	175	150	130	105	91	78	62	55	45	35	28	21
50 + 63	220	180	170	130	120	105	90	80	65	52	43	33
80 + 100	500	450	400	350	310	270	230	205	180	150	125	100
125	810	710	680	590	520	470	420	390	330	270	230	200

Critical load diagram for the piston rod

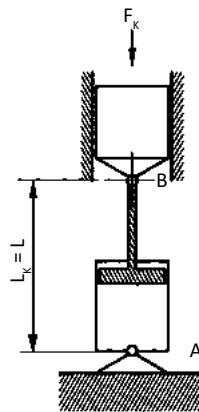


First elastic case of buckling



A: fixed restraint
 B: open end
 $L_k \approx 4 * \text{cylinder stroke length}$

Second elastic case of buckling



A: joint
 B: joint
 $L_k \approx 2 * \text{cylinder stroke length}$

Knowing the actual buckling case, either 1 or 2, and knowing the requested stroke length you can calculate the buckling length L_k . If you know the buckling force F_k (compressive force) you determine in the diagram above the intersection of both data. Choose the next graph line above to get the necessary rod diameter.