

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97

Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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Технические характеристики на пневмоцилиндры из нержавеющей стали ISOline KA/8000 компании **IMI NORGREN**

Виды товаров: с задним креплением проушины, с регулируемой амортизацией, с буфером, с задним креплением и регулируемой амортизацией, с универсальной задней проушиной, с универсальным задним креплением и регулируемой амортизацией.

KA/802000/M

Stainless Steel ISOLine™ 15552 cylinder, double acting



- > ø 32 ... 200 mm
- > High performance adaptive cushioning system "ACS"
- > High temperature version up to +150 °C
- > High corrosion and acid resistance
- > Ideal for applications in the food industry



Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

ISO 15552

Operation:

Double acting, adjustable cushioning

Operating pressure:

ø 32 ... 200 mm
Cylinder with Round barrel
1 ... 16 bar (14 ... 232 psi)

Ports:

G1/8 ... 3/4

Cylinder diameters:

32, 40, 50, 63, 80, 100, 125, 160, 200 mm

Standard strokes:

25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 mm

Non-standard strokes:

ø 32 ... 125 mm (5 ... 2800 mm)
ø 160 ... 200 mm (5 ... 2600 mm)

Operating temperature:

ø 32 ... 200 mm
"Standard version"
-10 ... +80 °C max. (+14 ... +176 °F)
ø 32 ... 200 mm
"High temperature version" (T)
0 ... +150 °C max.
(-17,7 ... +302 °F)
Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35 °F).

Standard Materials:

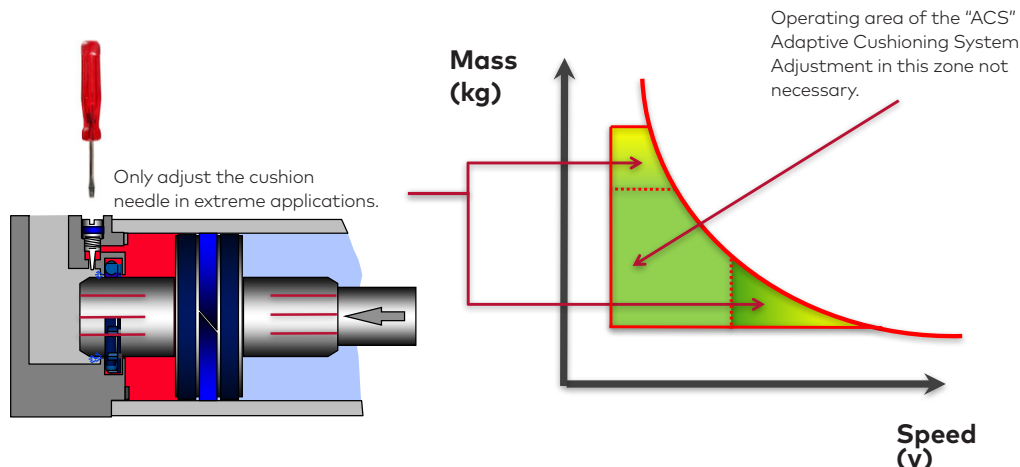
Barrel: X5 Cr Ni 18 10 (1.4301; AISI 304)
End covers: X5 Cr Ni 19 10 (1.4308; AISI 304)
Piston rod: X10 Cr Ni S 18 9 (1.4305; AISI 303)
Nuts and screws: X10 Cr Ni S 18 9 (1.4305; AISI 303)
Tie rods: X5 Cr Ni 18 10 (1.4301; AISI 304)
Piston rod seals: FPM
Piston seals: PUR ø 32 ... 100 mm, NBR ø 125 ... 200 mm
Cushion seals: NBR
O-rings: FPM

Technical data

Cylinder ø (mm)	32	40	50	63	80	100	125	160	200
Port size	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4
Piston rod ø (mm)	12	16	20	20	25	25	32	40	40
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	M36 x 2	M36 x 2
Cushion length (mm)	20	22	24	24	26	33	39	43	43
Cushioning									
Adaptive cushioning systems "ACS"	•	•	•	•	•	•	•		
Cushioning (adjustable cushion)								•	•
Initial cushion volume (cm ³)	12,8	20,2	36	64	111	235	427	784	1273
Theoretical thrusts at 6 bar outstroke (N)	482	754	1178	1870	3016	4710	7363	12064	18840
Theoretical thrusts at 6 bar instroke (N)	414	633	990	1680	2722	4416	6882	11310	18090
Air consumption at 6 bar outstroke (l/cm)	0,056	0,088	0,137	0,218	0,35	0,55	0,86	1,41	2,2
Air consumption at 6 bar instroke (l/cm)	0,048	0,074	0,114	0,195	0,32	0,51	0,79	1,32	2,1

The function

The new "ACS" Adaptive Cushioning System provides a high performance pneumatic damping function. The system will automatically cushion for a wide range of general applications as delivered. Manual adjustment is still possible for extreme applications.



Design and sizing in pneumatics

Golden Rules

Design and sizing in pneumatics is often based upon experience coupled with an element of fear of under specifying crucial equipment. In an attempt to ensure enough power, engineers may select over sized cylinders and then select over sized valves to supply them with enough air. The same uncertainty can also lead to over sized specification of air line equipment, fittings and tubing. The outcome is components larger than necessary that use too much compressed air and waste energy and money. However when following some well proven golden rules and a few laws of pneumatics it is easy to achieve correctly sized pneumatic installations.

Basics to Consider

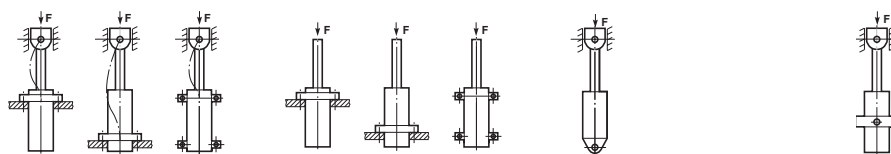
The force required, the pressure available, the speed of movement and air consumption. ISO and VDMA standard or compact style also cushioning and sensors. Cylinders are greased on assembly and operate under normal conditions without additional lubrication. However using a lubricator will extend the life of these products.

Golden Rule:

The theoretical force of the cylinder should be 25% extra for high speed, 50% extra for low speed and 100% extra for ultra low speed (positioning) applications. The correct sizing is based upon the required force and applied pressure. Go to page 1 for more information on cylinder sizing and air consumption.

Load and Buckling

For applications with high side loading, use pneumatic slide actuators or standard cylinders fitted with guide units. Alternatively external guide bearings should be installed. When a long stroke length is specified, care must be taken to ensure the rod length is within the limits for prevention of buckling. The table shows the maximum stroke length for a variety of installation arrangements.

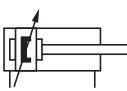
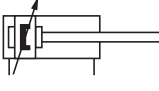
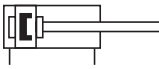


Cylinder ø (mm)	Piston rod ø (mm)	Load case 1 Pressure (bar)				Load case 2 Pressure (bar)				Load case 3 Pressure (bar)				Load case 4 Pressure (bar)			
		4	6	10	16	4	6	10	16	4	6	10	16	4	6	10	16
32	12	1100	860	650	500	500	390	290	210	650	520	380	290	760	600	450	340
40	16	1600	1200	950	730	730	580	430	320	940	750	560	430	1100	880	660	500
50	20	2000	1600	1200	930	930	740	550	420	1200	960	720	550	1400	1100	840	640
63	20	1500	1200	930	720	720	570	420	310	930	740	550	420	1100	860	650	490
80	25	1900	1500	1100	880	880	700	510	380	1100	910	680	510	1300	1100	800	600
100	25	1500	1200	880	670	670	520	380	270	880	690	510	370	1000	820	600	450
125	32	2000	1600	1200	910	910	710	520	380	1200	940	690	520	1400	1100	820	620
160	40	2400	1900	1500	1100	1100	880	640	480	1400	1200	860	640	1700	1400	1000	760
200	40	1900	1500	1100	860	860	670	480	350	1100	890	650	480	1300	1000	770	580

Additional ISO 15552 Cylinder ranges (Cylinder ranges in the red frame are shown in this data sheet.)


Symbols		Profile barrel	Round Barrel	Industrial Automation	Food & Beverage	Automotive	ATEX II 2GD	Rail (*)	CE-marked	ø (mm)	Range	Description	Datasheet
		•	•	•	•		•		•	32 ... 125	PRA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_225_PRA_802000_M_EX
								•			LPRA/802000		1_5_220_LPRA_802000_M_LRA_8000_M
		•	•			•	•		•	32 ... 125	RA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_225_PRA_802000_M_EX
								•			LPRA/802000		1_5_220_LPRA_802000_M_LRA_8000_M
		•	•			•	•		•	160 ... 320	RA/8000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_126_RA_8000_M_EX
								•			LRA/8000		1_5_220_LPRA_802000_M_LRA_8000_M
		•	•	•	•	•	•	•	•	32 ... 200	KA/802000	Stainless steel Cylinder	1_5_222_KA_802000_M 1_5_228_KA_802000_M_EX
		•	•	•			•		•	32 ... 100	PRA/822000	Smooth Line Cylinder	1_5_230_PRA_822000_M 1_5_235_PRA_822000_M_EX
		•	•	•			•		•	32 ... 100	PRA/842000	Clean Line Cylinder	1_5_240_PRA_842000_M 1_5_245_PRA_842000_M_EX
		•	•			•				32 ... 100	PRA/862000	IVAC Industrial Cylinder	1_5_250_PRA_862000_M 1_5_255_PRA_862000_M_EX
							•		•				
		•	•	•	•	•				32 ... 100	PRA/882000	IVAC Clean Line Cylinder	1_5_260_PRA_882000_M 1_5_265_PRA_882000_M_EX
							•		•				
		•	•	•	•	•	•		•	40 ... 125	PSA/802000/F1	Cylinder with position sensor	1_9_067_PSA_802000_F1_SA_8000_F1 1_9_068_PSA_802000_F1_EX_SA_8000_F1_EX
		•	•			•	•		•	160 ... 320	SA/8000/F1	Cylinder with position sensor	1_9_067_PSA_802000_F1_SA_8000_F1 1_9_068_PSA_802000_F1_EX_SA_8000_F1_EX
		•	•	•	•			•		32 ... 100	PRA/801000, PRA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000
		•	•			•		•		32 ... 100	RA/801000, RA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000

Cylinder variants

Symbol Please see the description below	Versions			Piston Rod Material				Standard Model with		ø (mm)	Description	Page
	H	L	T	R	S	C	D	Male Piston Rod Thread	Female Piston Rod Thread			
			•		X			.KA/802000/M	.KA/802000/MX	32 ... 125	Standard Cylinder	8/9
			•		X			.KA/802000/M	-	160 ... 200	Standard Cylinder	8
					X			KA/802000/W2	KA/802000/W2X	32 ... 125	Cylinder with Special Wiper - Seal (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	8/9
					X			KA/802000/W2	-	160 ... 200		
			•		X			.KA/802000/MU	.KA/802000/MUX	32 ... 125	Cylinder with Extended Piston Rod ø 32 ... 125 mm (Stroke + Extension = 2800 mm) ø 160 ... 200 mm (Stroke + Extension = 2600 mm)	8/9
			•		X			.KA/802000/MU	-	160 ... 200		
					X			KA/802000/W6	KA/802000/W6X	32 ... 125	Cylinder with Extended Piston Rod and Special Wiper - Seal suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice	8/9
					X			KA/802000/W6	-	160 ... 200		
			•		X			.KA/802000/MW	.KA/802000/MWX	32 ... 125	Cylinder without Cushioning	8/9
			•		X			.KA/802000/MW	-	160 ... 200		
			•		X			.KA/802000/JM	.KA/802000/JMX	32 ... 125	Cylinder with Double Ended Piston Rod	9
			•		X			.KA/802000/JM	-	160 ... 200		
					X			KA/802000/W4	KA/802000/W4X	32 ... 125	Cylinder with Double Ended Piston Rod and Special Wiper - Seal without Magnet suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice	8/9
					X			KA/802000/W4	-	160 ... 200		

Note: Versions: H = Hydraulic (ø 32 ... 100 mm); L = Low temperature -40 °C (-40 °F) (ø 32 - 125mm), -30 °C (-22 °F) (ø 160 - 200 mm);

Versions: T = High temperature +150 °C (+302 °F); K = Stainless steel (austenitic); X = Standard; • = Option

Option selector

Non-standard variants	Substitute
High temperature version +150 °C max. (+302 °F)	T
Cylinder ø (mm)	Substitute
032, 040, 050, 063, 080, 100, 125, 160, 200	
Variants ø 32 ... 200 mm (magnetic piston)	Substitute
Standard	M
Special wiper/seal	W2
Without cushion	MW
Double ended piston rod	JM
Double ended piston rod, special wiper/seal	W4
Extended piston rod	MU
KA/8****/MU/****/***	Extension (mm)
Extended piston rod, special wiper/seal	W6
KA/8****/W6/****/***	Extension (mm)

★KA/802★ ★ ★ / ★ ★ ★ / ★ ★ ★

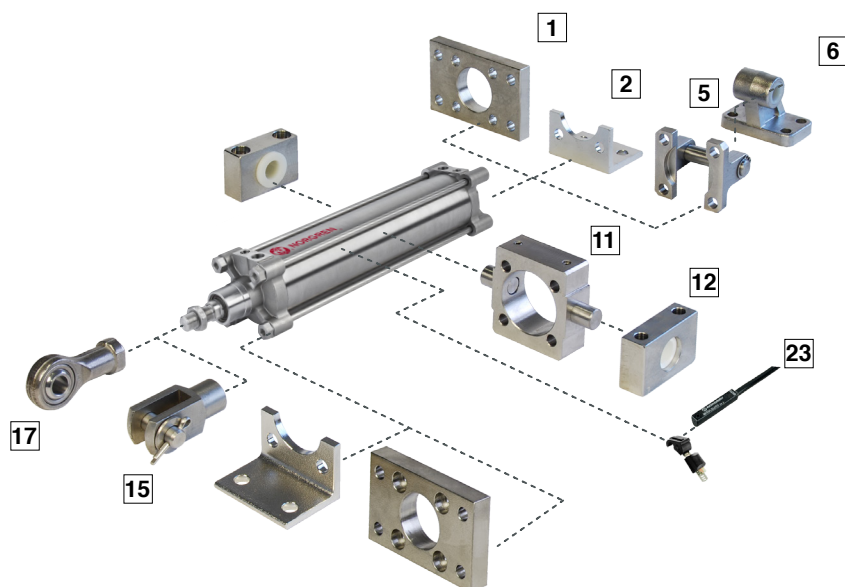
Strokes (mm)	Substitute
5 ... 2800	
Piston rod thread	Substitute
Male	None
Female (Ø32 ... 125 mm)	X

Note: If position is not required, disregard option position within part number e.g. KA/802100/M/100. For combinations of cylinder variants consult our technical service.

Additional variants/options are not possible.

Detail's see table on page 4.

Cylinder with Round barrel $\varnothing$ 32 ... 200 mm



Mountings

	B, G	C	D	F	S	SW	UF	UH
								
Cyl. Ø	1 Page 10	2 Page 10	5 Page 10	15 Page 10	12 Page 11	6 Page 11	17 Page 11	11 Page 11
32	KQA/8032/22	KQA/8032/21	KQA/8032/23	KQM/55433/25	KQA/8032/41	M/P72288	KQM/8032/32	KQA/8032/40
40	KQA/8040/22	KQA/8040/21	KQA/8040/23	KQM/55441/25	KQA/8040/41	M/P72289	KQM/8040/32	KQA/8040/40
50	KQA/8050/22	KQA/8050/21	KQA/8050/23	KQM/55451/25	KQA/8040/41	M/P72290	KQM/8050/32	KQA/8050/40
63	KQA/8063/22	KQA/8063/21	KQA/8063/23	KQM/55451/25	KQA/8063/41	M/P72291	KQM/8050/32	KQA/8063/40
80	KQA/8080/22	KQA/8080/21	KQA/8080/23	KQA/8080/25	KQA/8063/41	M/P72292	KQM/8080/32	KQA/8080/40
100	KQA/8100/22	KQA/8100/21	KQA/8100/23	KQA/8080/25	KQA/8100/41	M/P72293	KQM/8080/32	KQA/8100/40
125	KQA/8125/22	KQA/8125/21	KQA/8125/23	KQA/8125/25	KQA/8100/41	–	KQM/8125/32	KQA/8125/40
160	–	–	–	–	–	–	–	–
200	–	–	–	–	–	–	–	–
Position	Style	Stainless steel			Position	Style	Standard	
1	B, G	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2			12	S	Swivel bearing: X 5 Cr Ni 18 10 (1.4301; AISI 304), bearing: PA	
2	C	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2			15	F	Clevis mounting: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Circlip: X 10 Cr Ni S 18 9 (1.4305; AISI 303)	
5	D	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2 Bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303)			17	UF	X 10 Cr Ni S 18 9 (1.4305; AISI 303), Inner ring X 105 Cr Co Mo 18-2 (1.4528), Outer ring X 5 Cr Ni 18 10 (1.4301; AISI 304)	
6	SW	X 6 Cr Ni 18 9 (1.4308; AISI 304)				Bracket for switches	Body: PA/PP, screw and holding strap A2	
11	UH	Adjustable intermediate mounting: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Bolts: X 10 Cr Ni S 18 9 (1.4305; AISI 303), screws: A2						

Accessories Round barrel (ø 32 ... 200 mm)

Model		Port size	Straight fitting	Elbow fitting
	ø			
KA/802032/M/*	32	G1/8	S02250618	C02470618
KA/802040/M/*	40	G1/4	S02250628	C02470628
KA/802050/M/*	50	G1/4	S02250828	C02470828
KA/802063/M/*	63	G3/8	S02250838	C02470838
KA/802080/M/*	80	G3/8	S02251038	C02471038
KA/802100/M/*	100	G1/2	S02251248	C02471248
KA/802125/M/*	125	G1/2	S02251248	C02471248
KA/802160/M/*	160	G3/4	-	-
KA/802200/M/*	200	G3/4	-	-

For alternative fitting types please contact the technical service.

Magnetically operated switches

	M/50/**	Switch mounting brackets for M/50
		
		23
ø	Page 12-16	Page 16
32		QM/27/2/1
40		QM/27/2/1
50		QM/27/2/1
63		QM/27/2/1
80		QM/27/2/1
100		QM/27/2/1
125		QM/27/2/1
160		QM/27/2/1
200		QM/27/2/1

Spares kit for round barrel

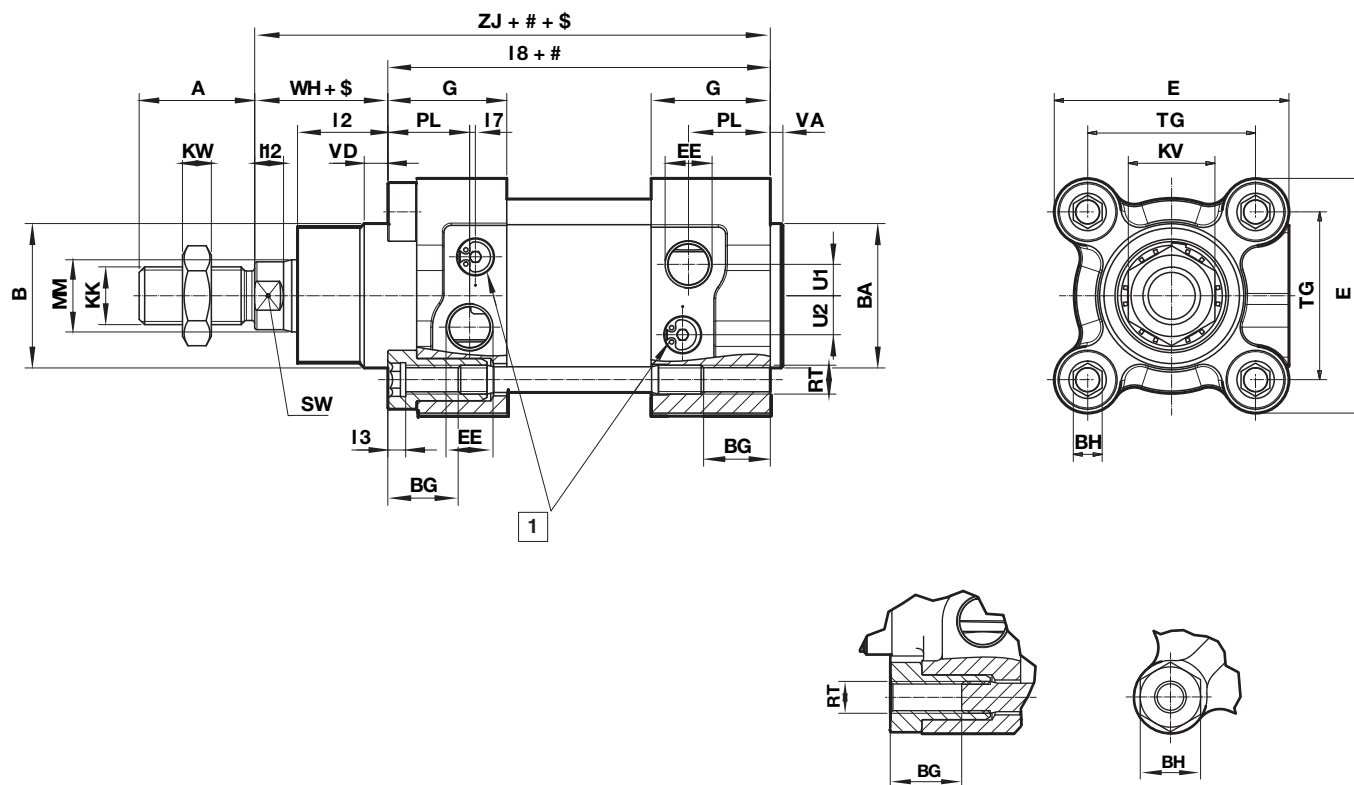
(wearing parts to be replaced are: piston seals, barrel seals, damping seals and piston rod seals as well as the wear ring)



Spares kit		Option			
Piston rod thread	Male thread		M / MU / MW	JM	W2 / W6
	Female thread		MX / MUX / MWX	JMX	W2X / W6X
	Model	ø	Standard temperature (-10 °C ... +80 °C)		
Standard	KA/802***	032	KQA/8032/00	KQA/8032/J/00	QA/8032/W1/00
		040	KQA/8040/00	KQA/8040/J/00	QA/8040/W1/00
		050	KQA/8050/00	KQA/8050/J/00	QA/8050/W1/00
		063	KQA/8063/00	KQA/8063/J/00	QA/8063/W1/00
		080	KQA/8080/00	KQA/8080/J/00	QA/8080/W1/00
		100	KQA/8100/00	KQA/8100/J/00	QA/8100/W1/00
		125	KQA/8125/00	KQA/8125/J/00	QA/8125/W1/00
		160	KQA/8160/00	KQA/8160/J/00	QA/8160/W1/00
		200	KQA/8200/00	KQA/8200/J/00	QA/8200/W1/00
	Model	ø	High temperature (0 °C ... +150 °C)		
Special option	TKA/802***	032	TQA/8032/00	TQA/8032/J/00	-
		040	TQA/8040/00	TQA/8040/J/00	-
		050	TQA/8050/00	TQA/8050/J/00	-
		063	TQA/8063/00	TQA/8063/J/00	-
		080	TQA/8080/00	TQA/8080/J/00	-
		100	TQA/8100/00	TQA/8100/J/00	-
		125	TQA/8125/00	TQA/8125/J/00	-
		160	TQA/8160/00	TQA/8160/J/00	-
		200	TQA/8200/00	TQA/8200/J/00	-

Basic dimensions
KA/802000/M
Standard Cylinder
ø 32 - 200 mm

Dimensions in mm
Projection/First angle



Ø	A -0,5	ø B d11	ø BA d11	BG min	 BH	□ E	EE	G	KK	 KV	KW	L2	L3	L7	L8	L12	ø MM h9	PL	TG
32	22	30	30	16	6	47	G1/8	29	M10 x 1,25	17	5	19,5	4	6,6	94	5,5	12	15	32,5
40	24	35	35	16	6	53	G1/4	34,5	M12 x 1,25	19	6	22	4	5,6	105	6,5	16	21,5	38
50	32	40	40	16	8	65	G1/4	33	M16 x 1,5	24	8	25	5	1,6	106	8	20	22,7	46,5
63	32	45	45	16	8	75	G3/8	36,5	M16 x 1,5	24	8	25	5	3,6	121	8	20	24,2	56,5
80	40	45	45	17	19	95	G3/8	42	M20 x 1,5	30	10	33	-	1,8	128	10	25	29,7	72
100	40	55	55	17	19	113	G1/2	42	M20 x 1,5	30	10	35	-	3,8	138	10	25	27,7	89
125	54	60	60	20	24	140	G1/2	54	M27 x 2	41	13,5	44	-	1,8	160	13	32	39,7	110
160	72	65	65	28,5	32	180	G3/4	55	M36 x 2	55	18	58	-	-	180	16	40	31,5	140
200	72	75	75	28,5	32	220	G3/4	52,5	M36 x 2	55	18	67	-	-	180	16	40	26,5	175

Ø	RT	 SW	U1	U2	VA	VD	WH	ZJ	Model Round barrel	at Ø mm	per 25 mm
32	M 6	10	4,6	6,3	3,5	6	26	120	KA/802032/M/*	0,9 (kg)	0,06 (kg)
40	M 6	13	5,8	9,2	3,5	6	30	135	KA/802040/M/*	1,3 (kg)	0,08 (kg)
50	M 8	17	8,7	10,8	3,5	6	37	143	KA/802050/M/*	2,0 (kg)	0,13 (kg)
63	M 8	17	10	12,8	3,5	6	37	158	KA/802063/M/*	3,0 (kg)	0,14 (kg)
80	M 10	22	12	14,5	3,5	6	46	174	KA/802080/M/*	5,0 (kg)	0,30 (kg)
100	M 10	22	9	14,5	3,5	6	51	189	KA/802100/M/*	7,3 (kg)	0,34 (kg)
125	M 12	27	12	17	5,5	8	65	225	KA/802125/M/*	12,2 (kg)	0,51 (kg)
160	M 16	36	15	17	6	10	80	260	KA/802160/M/*	23,4 (kg)	0,88 (kg)
200	M 16	36	19	14	6	10	95	275	KA/802200/M/*	34,4 (kg)	1,14 (kg)

* Please insert stroke length.

Basic Dimension are also for cylinder variants or for different piston rod material

TKA/802000/M - High Temperature Cylinder

KA/802000/W2 - Cylinder with Special Wiper - Seal

KA/802000/MU - Cylinder with Extended Piston Rod

KA/802000/W6 - Cylinder with Extended Piston Rod and Special Wiper - Seal

KA/802000/MW - Cylinder without Cushioning

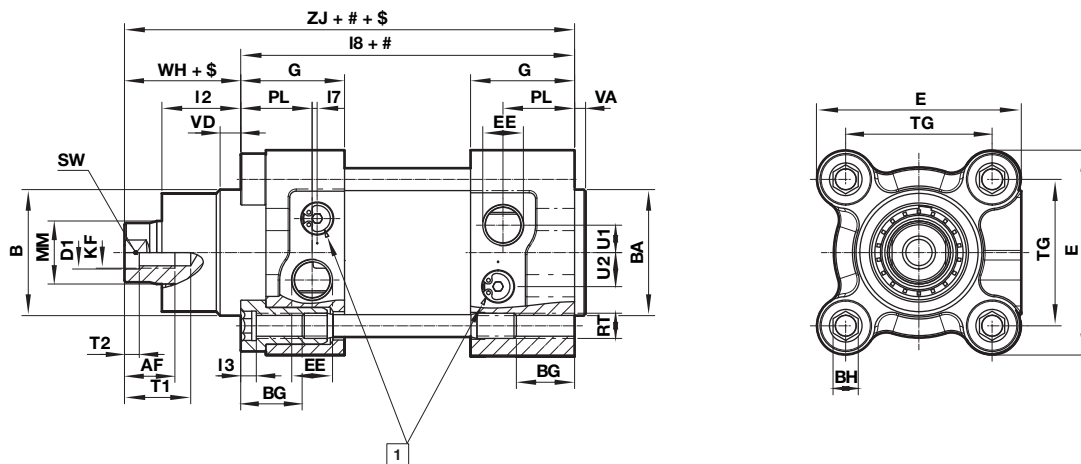
Cylinder variants

KA/802000/MX; /MUX; /MWX; /W2X; /W6X

Cylinder with Female Piston Rod Thread

Dimensions in mm

Projection/First angle



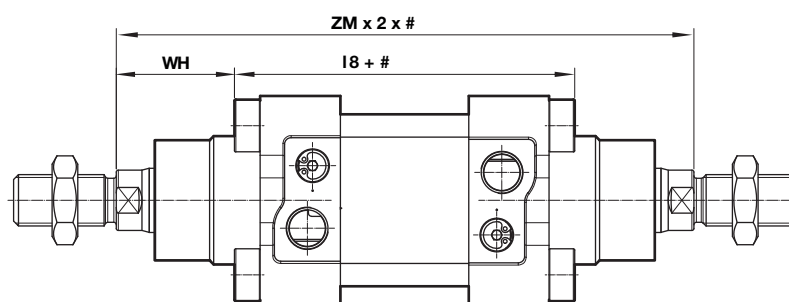
Stroke

ø	AF	ø D1	KF	I12	ø MM h9	SW	T1	T2
32	12	6,4	M6	5,5	12	10	16	2,6
40	12	8,4	M8	6,5	16	13	16	3,3
50	16	10,5	M10	8	20	17	21	4,7
63	16	10,5	M10	8	20	17	21	4,7
80	20	13	M12	10	25	22	25	6,1
100	20	13	M12	10	25	22	25	6,1
125	32	17	M16	13	32	27	38	8

For missing dimensions please see page 8.

KA/802000/JM, KA/802000/W4 – Cylinder with Double Ended Piston Rod

KA/802000/JMX, KA/802000/W4X – Cylinder with Double Ended Piston Rod and Female Piston Rod Thread



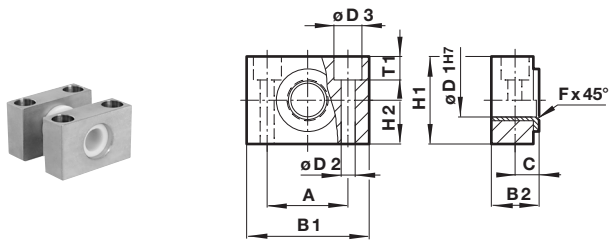
Stroke

ø	L8	WH	ZM	Model Round barrel
32	94	26	146	KA/802032/JM/*
40	105	30	165	KA/802040/JM/*
50	106	37	180	KA/802050/JM/*
63	121	37	195	KA/802063/JM/*
80	128	46	220	KA/802080/JM/*
100	138	51	240	KA/802100/JM/*
125	160	65	290	KA/802125/JM/*
160	180	80	340	KA/802160/JM/*
200	180	95	370	KA/802200/JM/*

* Please insert stroke length; For missing dimensions please see page 8.

Trunnion support S

Conforms to ISO 15552, type AT4

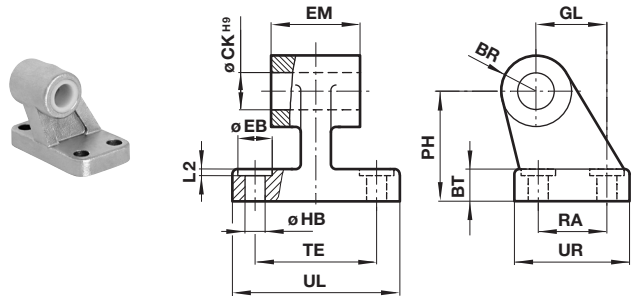


Ø	A	B	C	ØD1	Fx	H	T1	kg	Model (S)
		1	2	H7	45°	1	2		
32	32	46	18	10,5	12	6,6	11	1	KQA/8032/41
40/50	36	55	21	12	16	9	15	1,6	KQA/8040/41
63/80	42	65	23	13	20	11	18	1,6	KQA/8063/41
100/125	50	75	28,5	16	25	14	20	2	KQA/8100/41

Wide hinge SW

Conforms to ISO 15552, type AB7

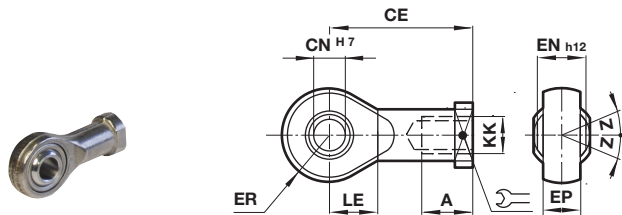
Dimensions in mm
Projection/First angle



Ø	BR	BT	PH	ØCK	ØEB	EM	GL	ØHB	L2	RA	TE	UL	UR	kg	Model (SW)
				H9											
32	10	7	32	10	12	25,6	21	6,6	1,6	18	38	50	31	0,15	M/P72288
40	11	9	36	12	12	27,6	24	6,6	1,6	22	41	53	35	0,21	M/P72289
50	13	11	45	12	15	31,6	33	9	1,6	30	50	65	45	0,41	M/P72290
63	15	11	50	16	15	39,6	37	9	1,6	35	52	67	50	0,53	M/P72291
80	15	14	63	16	18	49,6	47	11	2,5	40	66	84	60	0,82	M/P72292
100	18	15	71	20	18	59,6	55	11	2,5	50	76	94	70	1,22	M/P72293
125	22	20	90	25	-	69,5	70	14	-	60	94	124	90	1,56	M/P72432

Universal piston rod eye UF

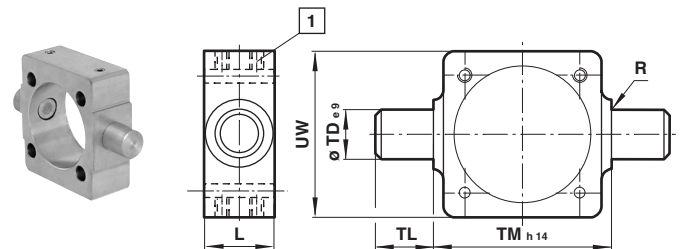
Conforms to DIN ISO 8139



Ø	Thread	AX	CE	ØCN	EN	ER	LE	Z	kg	Model (UF)
	KK			H7	-0,1					
32	M10x1,25	20	43	10	14	14,5	14	13°	0,07	KQM/8032/32
40	M12x1,25	22	50	12	16	16,5	16	13°	0,11	KQM/8040/32
50/63	M16x1,5	28	64	16	21	21,5	21	15°	0,21	KQM/8050/32
80/100	M20x1,5	33	77	20	25	25,5	25	15°	0,38	KQM/8080/32

Adjustable trunnion mounting UH

Conforms to ISO 15552, type MT4



1 Locking screws

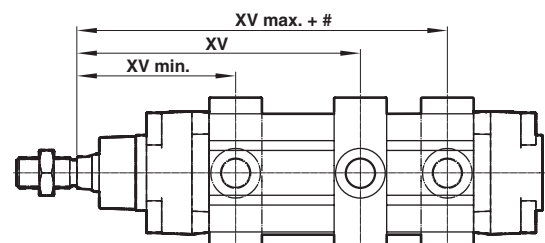
Torque max: Ø 32 & 40 mm = 6 Nm; Ø 50 & 63 mm = 10 Nm;
Ø 80 & 100 mm = 15 Nm; Ø 125 mm = 25 Nm

Ø	L	R	ØTD	TL	TM	UW	XV	XV	kg	Model (UH)
			e9		h14		min.	max.		
32	20	1	12	12	50	53	67,5	78,5	0,24	KQA/8032/40
40	24	1,6	16	16	63	65	78,5	86,5	0,48	KQA/8040/40
50	28	1,6	16	16	75	75	84	96	0,7	KQA/8050/40
63	28	1,6	20	20	90	95	91,5	103,5	1,35	KQA/8063/40
80	28	1,6	20	20	110	115	106	114	1,46	KQA/8080/40
100	38	2	25	25	132	140	117	123	2,76	KQA/8100/40
125	50	2	25	25	160	143	144	146	3,28	KQA/8125/40

Style 'UH': It is most important that the locking screws which secure the mounting to the tie rod are tightened to the torque figures shown in the table below.

For maximum energy input, consult our Technical Service.

Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length. 'XV' = Distance from the piston rod shoulder to the centre of the mounting.



- > **Magnetically operated reed switch - Round style**
- > **Suitable for all cylinder ranges with magnetic piston**
- > **LED indicator on LSU models**
- > **Alternative variants allows a wide range of application**



Technical features

Operation:

M/50/LSU Normally open with LED (yellow)

Switching voltage (U_b):

10 ... 240 V a.c./170 V d.c.

Switching voltage output:

U_b - 2,7 V

Switching current

(see graph overleaf):

0,18 A max.

Switching power:

10 W/10 VA max.

Contact resistance:

150 mΩ

Response time:

1,8 ms

Operating temperature:

-25 ... +80 °C (-13 ... +176 °F)

High temperature version:

+150 °C max.(+302 °F)

Protection rating (EN 60529):

IP66

Shock resistance:

50 g (during 11 ms)

Vibration resistance:

35 g (at 2000 Hz)

Cable type:

2 x 0,25: PVC, PUR or silicone

3 x 0,25 PVC

Cable length:

2, 5 or 10 m

Electromagnetic compatibility

according to:

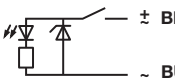
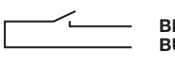
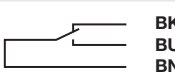
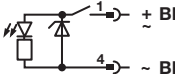
EN 60947-5-2

Materials:

Body: plastic

Cable: see table below

Technical data - Reed switches - additional information see data sheet en 4.3.005

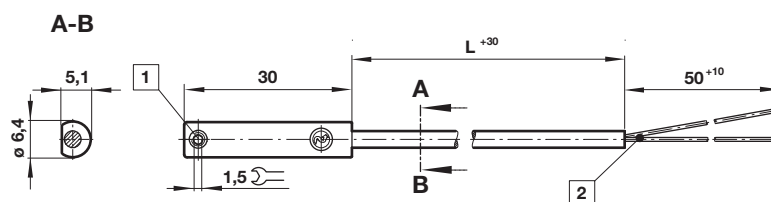
Symbol	Voltage		Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model	
	(V a.c.)	(V d.c.)											
	± BN	10 ... 240	10 ... 170	180	Normally open	-25 ... +80	•	IP 66	—	2, 5 or 10	PVC 2 x 0,25	37	M/50/LSU/*V
	~ BU	10 ... 240	10 ... 170	180	Normally open	-25 ... +80	•	IP 66	—	5	PUR 2 x 0,25	37	M/50/LSU/5U
	BN BU	10 ... 240	10 ... 170	180	Normally open	-25 ... +150	—	IP 66	—	2	Silicon 2 x 0,25	37	TM/50/RAU/2S
	BK BU BN	10 ... 240	10 ... 170	180	Changeover	-25 ... +80	—	IP 66	—	5	PVC 3 x 0,25	37	M/50/RAC/5V
	1- ± BN	10 ... 60	10 ... 60	180	Normally open	-25 ... +80	•	IP 66	M8 x1	0,3	PVC 3 x 0,25	16	M/50/LSU/CP *1)
	4- ~ BK	10 ... 60	10 ... 60	180	Normally open	-25 ... +80	•	IP 66	M12 x1	0,3	PVC 3 x 0,25	16	M/50/LSU/CC *1)

* Insert cable length; *1) Plug-in connector see page 12

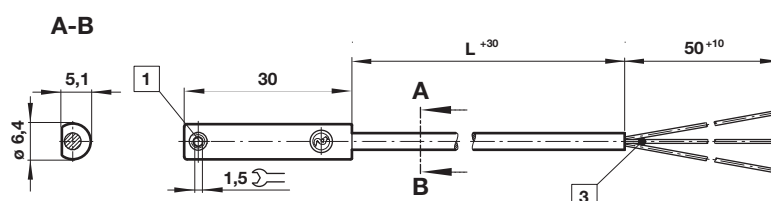
Dimensions

M/50/LSU/*V, M/50/LSU/5U,
TM/50/RAU/2S
Cable length L = 2, 5 or 10 m

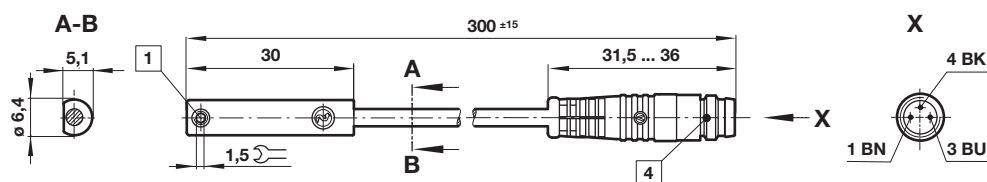
Dimensions in mm
Projection/First angle



M/50/RAC/5V
Cable length L = 5 m



M/50/LSU/CP
M/50/LSU/CC



Accessories

Plug-in connector cable with nut



- 1 Fixing screw
- 2 + BN = brown; - BU = blue (output)
- 3 - BK = black; + BN = brown; - BU = blue
- 4 Version CP: Plug M8 x 1, color code: BK = +; BN = -; BU = output
Version CC: Plug M12 x 1, color code: BK = +; BN = -; BU = output

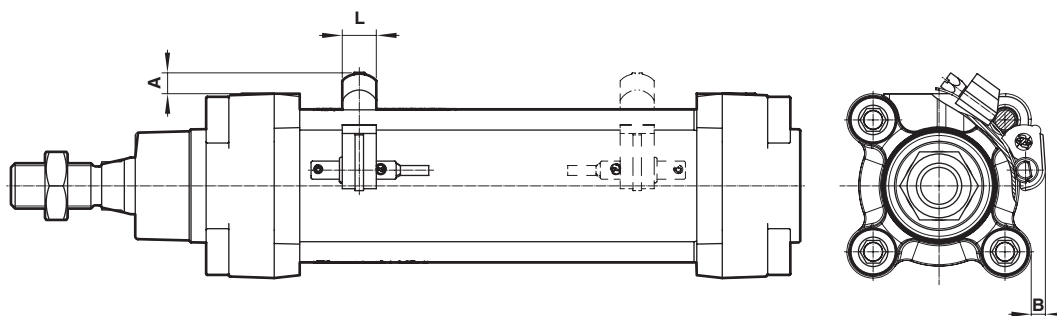
Outer cover	Cable length (m)	Weight (kg)	Connector	Connector
PVC 3 x 0,25	5	0,18	M8 x 1 straight connector	M/P73001/5
PUR 3 x 0,25	5	0,18	M8 x 1 straight connector	M/P73002/5
PVC 3 x 0,25	5	0,18	angled connector 90°	M/P34615/5
PUR 3 x 0,25	5	0,18	angled connector 90°	M/P34596/5
PUR 3 x 0,34	5	0,21	M12 x 1 straight connector	M/P34594/5

QM/27/2/1 – Switch mounting brackets for Round barrel

Switch: M/50



ø	A	B	L	Weight (kg)	Model	ø	A	B	L	Weight (kg)	Model	ø	A	B	L	Weight (kg)	Model
32	9	6	12	0,010	QM/27/2/1	63	7	6	12	0,010	QM/27/2/1	125	-2	-2	12	0,010	QM/27/2/1
40	9	7	12	0,010	QM/27/2/1	80	4	4	12	0,010	QM/27/2/1	160	-10	-9	12	0,010	QM/27/2/1
50	7	5	12	0,010	QM/27/2/1	100	3	2	12	0,010	QM/27/2/1	200	-17	-16	12	0,010	QM/27/2/1



- > Magnetically operated switch, solid state - round style
- > IO-Link version available
- > Suitable for all cylinder ranges with magnetic piston
- > Switches can be mounted flush in all profile cylinders
- > Reliable switching with a very fast response time
- > Particularly suited for use in high levels of vibration
- > LED indicator as standard
- > UL listed



Technical features

Operation:

PNP / NPN (see table)
Output with LED (yellow)
Normally open (standard)

Switching voltage (U_b):

10 ... 30 V d.c.
("supply class 2" acc. to cULus)

Voltage drop at output:

< 2,5 V

Residual current:

< 0,5 mA

Switching current

(see graph):

100 mA max. (standard)
300 mA max. (M/50/EHP)

Switching power:

3,0 W max. (standard)
9,0 W max. (M/50/EHP)

Response time:

< 0,1 ms (standard)
< 5 ms (M/50/IOP)

Operating frequency:

1 kHz (standard)
200 Hz (M/50/IOP)

Responsiveness:

2,8 mT

Hysteresis:

0,5 ... 1,5 mT
0,2 mT (M/50/IOP)

Repeatability:

< 0,1 mT

Protection rating (EN 60529):

IP67 (standard)
IP68 (M/50/EAP/5U, M/50/EHP/5U)

Operating temperature:

-40 ... +80 °C (-40 ... 176 °F)

(permanently fixed cable)

-25 ... +80 °C (-13 ... 176 °F)

(moving cable)

Cable type:

PVC 3 x 0,14 mm² (standard)

PUR 3 x 0,14 mm² (M/50/E*P/*U

and all variants with connector)

Cable length:

2, 5 and 10 m

Electromagnetic compatibility

according to:

EN 60947-5-2

Materials:

Housing: plastic

Thread insert: brass

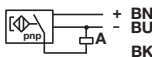
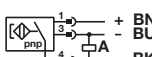
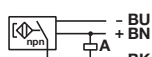
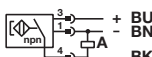
Set screw: stainless steel

Cable: see table below

Mounting type:

Flush mountable

Technical data - Solid state - additional information see data sheet en 4.3.007

Symbol	Voltage (V DC)	Current maximum (mA)	Function	IO-Link *1)	Operating temperature (°C)	LED	Protection class	Connector	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 30	100	PNP		-40 ... +80	•	IP67	---	2	PVC 3 x 0,14	23	M/50/EAP/2V
	10 ... 30	100	PNP		-40 ... +80	•	IP67	---	5	PVC 3 x 0,14	56	M/50/EAP/5V
	10 ... 30	100	PNP		-40 ... +80	•	IP67	---	10	PVC 3 x 0,14	102	M/50/EAP/10V
	10 ... 30	100	PNP / NPN	•	-40 ... +80	•	IP67	---	5	PVC 3 x 0,14	56	M/50/IOP/5V
	10 ... 30	100	PNP		-40 ... +80	•	IP68	---	5	PUR 3 x 0,14	56	M/50/EAP/5U
	10 ... 30	100	PNP		-40 ... +80	•	IP67	---	10	PUR 3 x 0,14	102	M/50/EAP/10U
	10 ... 30	300	PNP		-40 ... +80	•	IP67	---	2	PVC 3 x 0,14	23	M/50/EHP/2V
	10 ... 30	300	PNP		-40 ... +80	•	IP67	---	5	PVC 3 x 0,14	56	M/50/EHP/5V
	10 ... 30	300	PNP		-40 ... +80	•	IP67	---	10	PVC 3 x 0,14	102	M/50/EHP/10V
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M8 x 1	0,3	PUR 3 x 0,14	7	M/50/EAP/CP
	10 ... 30	100	PNP / NPN	•	-40 ... +80	•	IP67	M8 x 1	0,3	PUR 3 x 0,14	7	M/50/IOP/CP
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M12 x 1	0,3	PUR 3 x 0,14	16	M/50/EAP/CC
	10 ... 30	100	PNP		-40 ... +80	•	IP67	M12 x 1	2	PUR 3 x 0,14	35	M/50/EAP/CC/2
	10 ... 30	100	PNP / NPN	•	-40 ... +80	•	IP67	M12 x 1	0,3	PUR 3 x 0,14	16	M/50/IOP/CC
	10 ... 30	300	PNP		-40 ... +80	•	IP67	M8 x 1	0,3	PUR 3 x 0,14	7	M/50/EHP/CP
	10 ... 30	100	NPN		-40 ... +80	•	IP67	---	2	PVC 3 x 0,14	23	M/50/EAN/2V
	10 ... 30	100	NPN		-40 ... +80	•	IP67	---	5	PVC 3 x 0,14	56	M/50/EAN/5V
	10 ... 30	100	NPN		-40 ... +80	•	IP67	---	10	PVC 3 x 0,14	102	M/50/EAN/10V
	10 ... 30	100	NPN		-40 ... +80	•	IP67	M8 x 1	0,3	PUR 3 x 0,14	7	M/50/EAN/CP

Color code: see next page

*1) IO-Link functionality: see next page

IO-Link Switch conforming to IEC 61131-9

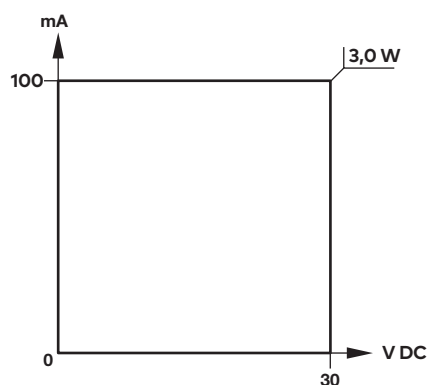
Properties and Functionality	M/50/EAP, M/50/EAN M/50/EHP	M/50/IOP
Operating Mode	Standard	Standard
Power LED		• •
LED sensor signal	•	• •
Normally open (delivery status)	•	• •
Normally closed		○ •
Delay mode		○ •
Installation aid		• •
Temperature measurement		•
Detection counter		•
Teach functionality		•
Responsiveness adjustment		•

• = included

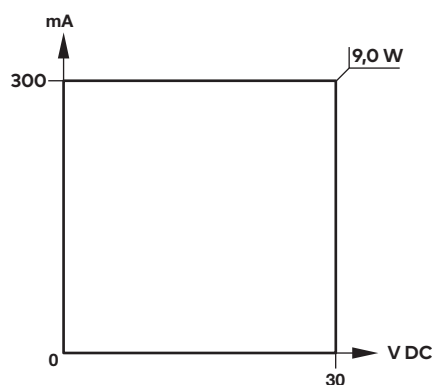
○ = optional (manufacture pre-setting required)

Switching current and switching voltage

M/50/EAP, M/50/EAN, M/50/IOP



M/50/EHP



Dimensions

M/50/EAP/*V,
M/50/EAP/*U,
M/50/IOP/5V,
M/50/EHP/*V,
M/50/EHP/5U,
M/50/EAN/*V
Cable length L = 2, 5 or 10 m

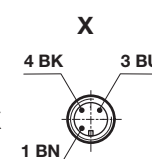
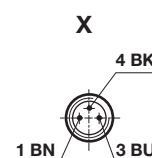
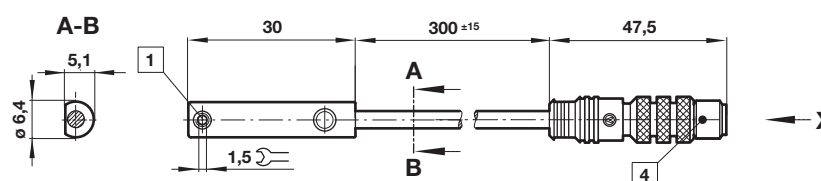
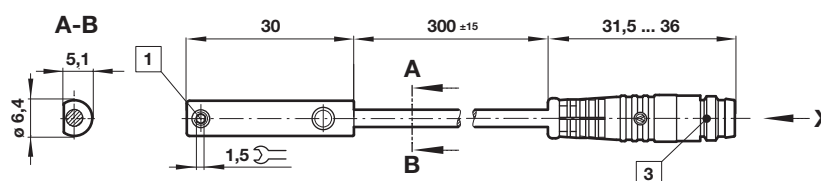
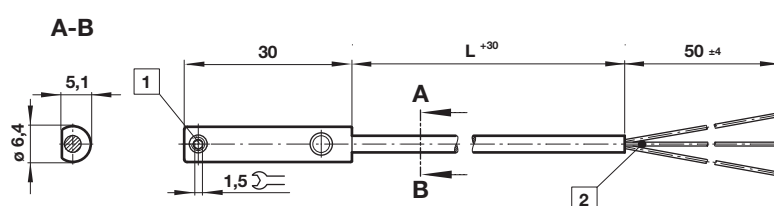
Dimensions in mm
Projection/First angle



M/50/EAP/CP,
M/50/EAN/CP,
M/50/IOP/CP,
M/50/EHP/CP



M/50/EAP/CC,
M/50/IOP/CC,
M/50/EHP/CC



1 Fixing screw

2 Color code: BK = black (output); BN = brown (+); BU = blue (-)

3 Connector M8 x 1; 1 BN = +; 3 BU = -; 4 BK = output

4 Connector M12 x 1; 1 BN = +; 3 BU = -; 4 BK = output

Accessories

Plug-in connector cable with nut



Outer cover	Cable length (m)	Weight (kg)	Connector	Connector
PVC 3 x 0,25	5	0,18	M8 x 1 straight connector	M/P73001/5
PUR 3 x 0,25	5	0,18	M8 x 1 straight connector	M/P73002/5
PVC 3 x 0,25	5	0,18	angled connector 90°	M/P34615/5
PUR 3 x 0,25	5	0,18	angled connector 90°	M/P34596/5
PUR 3 x 0,34	5	0,21	M12 x 1 straight connector	M/P34594/5

QM/27/2/1 – Switch mounting brackets for Round barrel

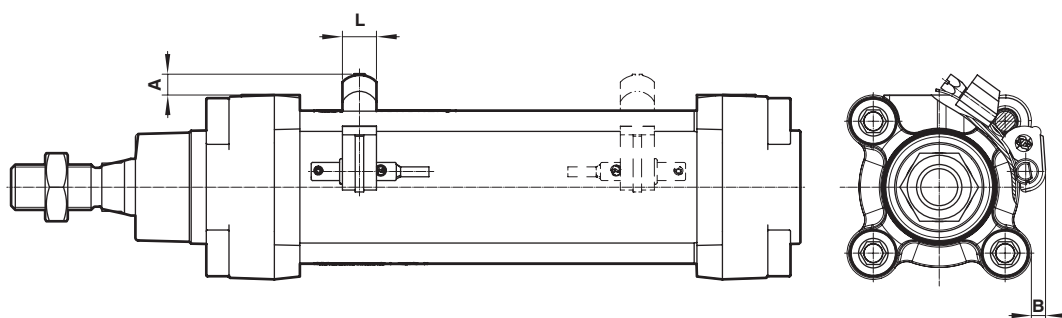
Switch: M/50



ø	A	B	L	Weight (kg)	Model
32	9	6	12	0,010	QM/27/2/1
40	9	7	12	0,010	QM/27/2/1
50	7	5	12	0,010	QM/27/2/1

ø	A	B	L	Weight (kg)	Model
63	7	6	12	0,010	QM/27/2/1
80	4	4	12	0,010	QM/27/2/1
100	3	2	12	0,010	QM/27/2/1

ø	A	B	L	Weight (kg)	Model
125	-2	-2	12	0,010	QM/27/2/1
160	-10	-9	12	0,010	QM/27/2/1
200	-17	-16	12	0,010	QM/27/2/1



Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

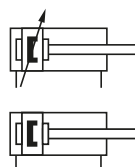
The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.



- > Ø 12 ... 25 mm
- > High corrosion and acid resistance
- > Magnetic piston as standard
- > Conforming to ISO 6432
- > Suitable for applications in the Food Industry
- > Buffer or adjustable cushioning
- > Nose mounting nut and piston rod locknut as standard



Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

ISO 6432

Operation:

Double acting with magnetic piston and buffer or adjustable cushioning

Operating pressure:

1 ... 10 bar (14 ... 145 psi)

Cylinder diameters:

12, 16, 20, 25 mm (buffer)

20, 25 mm (adjustable cushioning)

Strokes:

See page below

Non-standard strokes:

up to 500 mm max. on request

Operating temperature:

-10 ... +80°C max. (+14 ... +176°F)

Air supply must be dry enough

to avoid ice formation at

temperatures below +2°C (+35°F).

Materials:

Cylinder barrel: X5 Cr Ni 18 10

(1.4301; AISI 304)

End covers: X10 Cr Ni S 18 9

(1.4305; AISI 303)

Piston rod: X10 Cr Ni S 18 9

(1.4305; AISI 303)

Piston: POM

Buffer: PUR

Piston rod seal: PUR

Piston and cushion seal:

NBR

'O'-rings: NBR

Technical data

Cylinder Ø (mm)	12	16	20	25
Port size	M5	M5	G1/8	G1/8
Piston rod Ø (mm)	6	6	8	10
Piston rod thread	M6	M6	M6	M10x1,25
Cushion length mm	-	-	19	19
Theoretical thrusts at 6 bar outstroke (N)	67,8	120	188	294
Theoretical thrusts at 6 bar instroke (N)	51	104	158	247
Air consumption at 6 bar outstroke (l/cm)	0,008	0,014	0,022	0,035
Air consumption at 6 bar instroke (l/cm)	0,006	0,013	0,019	0,028

Standard strokes

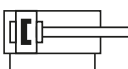
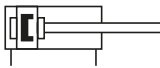
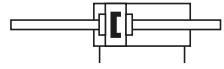
with buffer cushioning

Cylinder Ø (mm)	Stroke length (mm)									
	10	25	40	50	80	100	125	160	200	250
12	•	•	•	•	•	•	•	•	•	—
16	•	•	•	•	•	•	•	•	•	—
20	•	•	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•	•	•

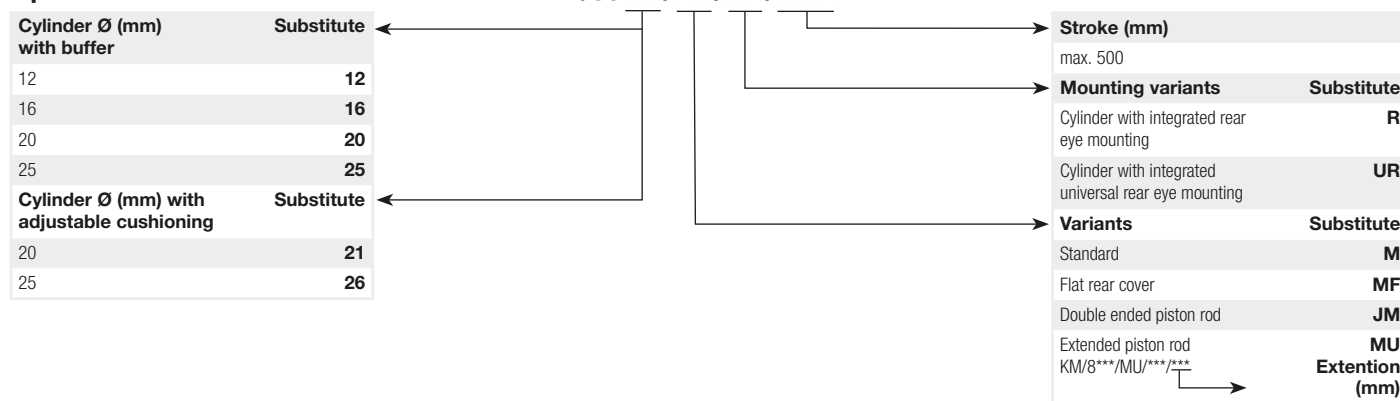
with adjustable cushioning

Cylinder Ø (mm)	Stroke length (mm)									
	10	25	40	50	80	100	125	160	200	250
20	—	•	—	•	•	•	•	•	•	•
25	—	•	—	•	•	•	•	•	•	•

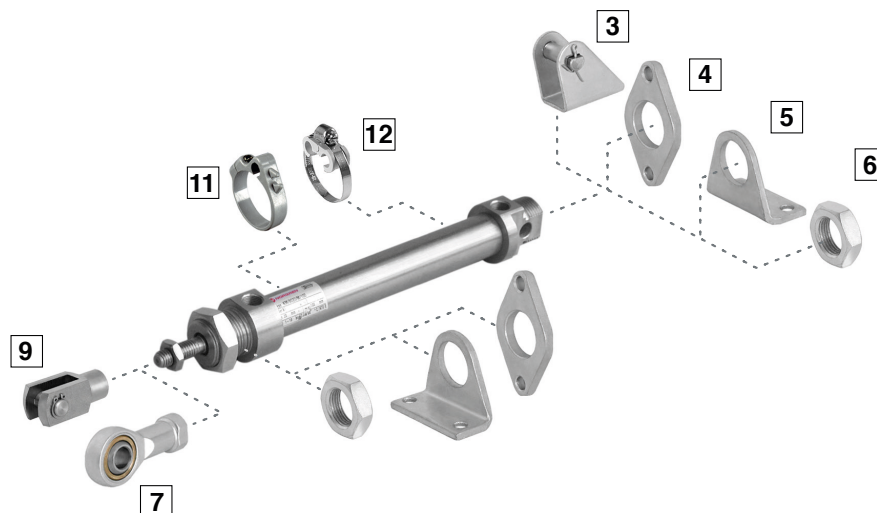
Cylinder variants

Symbol	Model magnetic piston	Description	Drawing Page
	KM/8000/M	Standard cylinder with integral eye mounting	4
	KM/8000/MF	Cylinder with flat rear cover	4
	KM/802./M/R	Cylinder Ø 20 & 25 mm with rear eye mounting	5
	KM/802./M/UR	Cylinder Ø 20 & 25 mm with universal rear eye mounting	5
	KM/8000/MU	Cylinder with extended piston rod piston rod extension 75 mm: KM/8***/*U/stroke/75	4
	KM/8000/JM	Cylinder with double ended piston rod (Ø 16 to 25 mm)	4
	KM/802./M	Cylinder Ø 20 & 25 mm with adjustable cushioning	4
	KM/802./M/R	Cylinder Ø 20 & 25 mm with adjustable cushioning and rear eye mounting	5
	KM/802./M/UR	Cylinder Ø 20 & 25 mm with adjustable cushioning and universal rear eye mounting	5

Option selector



Mountings



Materials of mountings and accessories standard cylinder

Position	Style	Stainless steel	Position	Style	Stainless steel
3	L	Rear hinge mounting: X 5 Cr Ni 18 10 (1.4301; AISI 304), bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303), eyebolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303)	7	UF	Body: X 5 Cr Ni 18 10 (1.4301; AISI 304), Inner ring: X 105 Cr Co 18-2 (1.4528), Outer ring: X 10 Cr Ni S 18 9 (1.4305; AISI 303)
4	B, G	Flange mounting: X 5 Cr Ni 18 10 (1.4301; AISI 304)	9	F	Piston rod clevis mounting: X 10 Cr Ni S 18 9 (1.4305; AISI 303), bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303), eyebolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303)
5	C	Foot mounting: X 5 Cr Ni 18 10 (1.4301; AISI 304)	11 & 12	Bracket for switches	Body POM, screws stainless steel
6	N	Nose nut: X 10 Cr Ni S 18 9 (1.4305; AISI 303)			

Model	B, G	C	F	L	N	UF
						
Ø	4	5	9	3	6	7
	Page 6	Page 6	Page 6	Page 6	Page 6	Page 6
12	M/P72405	M/P72403	KQM/8012/25	KQM/8012/24	M/P72398	KQM/8012/32
16	M/P72405	M/P72403	KQM/8012/25	KQM/8012/24	M/P72398	KQM/8012/32
20	M/P72406	M/P72404	KQM/8020/25	KQM/8020/24	M/P72399	KQM/8020/32
25	M/P72406	M/P72404	KQM/55433/25	KQM/8020/24	M/P72399	KQM/8032/32

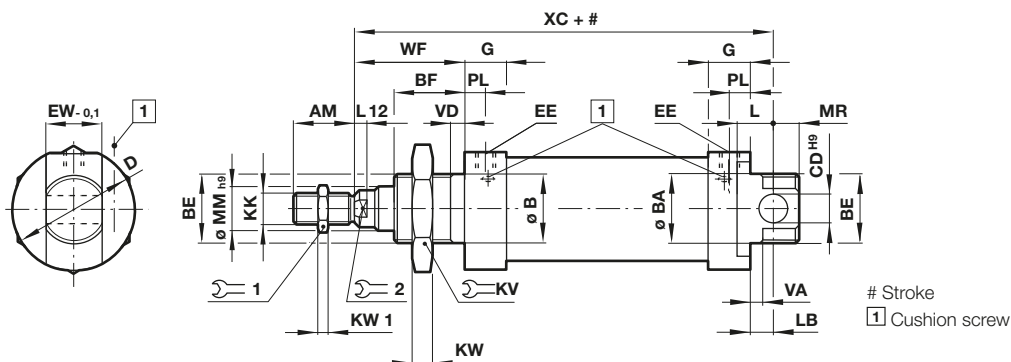
Model	Switch mounting brackets >15 mm stroke	<15 mm stroke	Magnetically operated switches
			
Ø	11	12	
	Page 7	Page 7	Page 7 & 8
12	QM/33/012/22	QM/33/016/23	
16	QM/33/016/22	QM/33/016/23	
20	QM/33/020/22	QM/33/020/23	
25	QM/33/025/22	QM/33/025/23	

Basic dimensions

KM/8000/M – Cylinder with buffercushioning

KM/8021/M & KM/8026/M – Cylinder with adjustable cushioning

Dimensions in mm
 Projection/First angle



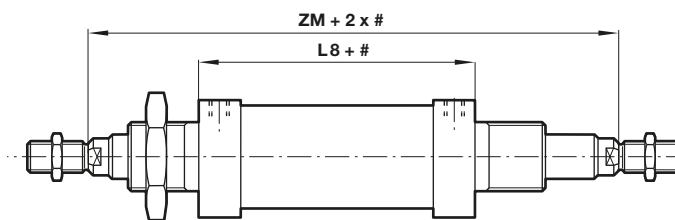
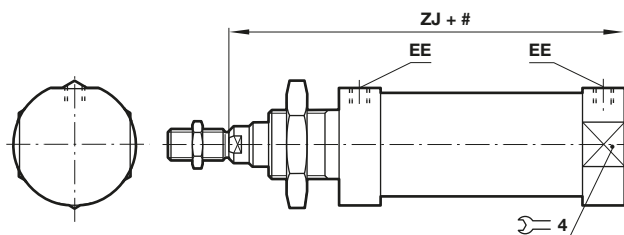
Ø	AM	Ø B/BA	BE	BF	Ø CD H9	Ø D	EE	EW -0,1	G	KK	KV	2	KW	Model
12	16	16	M16x1,5	17	6	20	M5	11,9	9,5	M6	22	5	5	KM/8012/M/*
16	16	16	M16x1,5	17	6	20	M5	11,9	9,5	M6	22	5	5	KM/8016/M/*
20	20	22	M22x1,5	20	8	30	G1/8	15,9	15	M8	27	7	8	KM/8020/M/*
25	22	22	M22x1,5	22	8	30	G1/8	15,9	15	M10x1,25	27	9	8	KM/8025/M/*
Ø	KW1	L	L12	LB	Ø MM h9	MR	PL	1	WF	VA/VD	XC	at 0 mm	per 25 mm	Model
12	3	9	3	3	6	8	5,5	10	22	2	75	0,116 kg	0,011 kg	KM/8012/M/*
16	3	9	3	4	6	7	5,5	10	22	2	82	0,137 kg	0,012 kg	KM/8016/M/*
20	4	12	3	3	8	11	8	13	24	2	95	0,306 kg	0,018 kg	KM/8020/M/*
25	5	12	4	7	10	9	8	17	28	2	104	0,383 kg	0,028 kg	KM/8025/M/*

* Please insert standard stroke length.

Cylinder variants

KM/8000/MF – Cylinder flat rear cover

KM/8000/JM – Cylinder with double ended piston rod



Ø	EE	ZJ	4	kg at 0 mm	kg per 25 mm	Model
12	M5	72	17	0,109	0,011	KM/8012/MF/*
16	M5	78	17	0,13	0,012	KM/8016/MF/*
20	G1/8	92	27	0,299	0,018	KM/8020/MF/*
25	G1/8	97	27	0,37	0,028	KM/8025/MF/*

Ø	L8	ZM	kg at 0 mm	kg per 25 mm	Model
16	56	100	0,14	0,018	KM/8016/JM/*
20	68	116	0,36	0,028	KM/8020/JM/*
25	69	125	0,44	0,043	KM/8025/JM/*

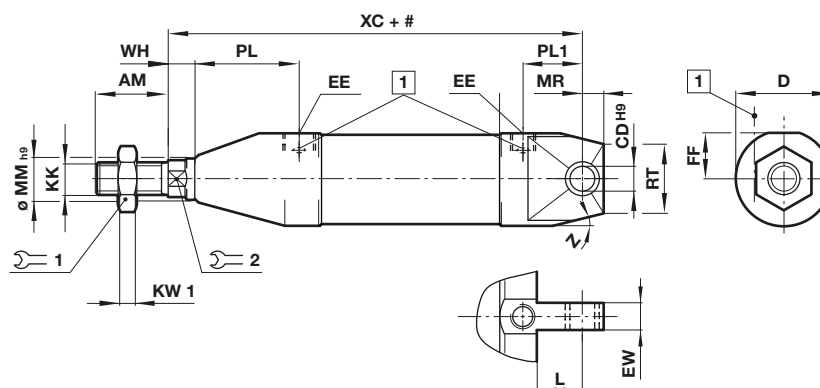
* Please insert standard stroke length.

Note: missing dimensions see standard cylinders

* Please insert standard stroke length.

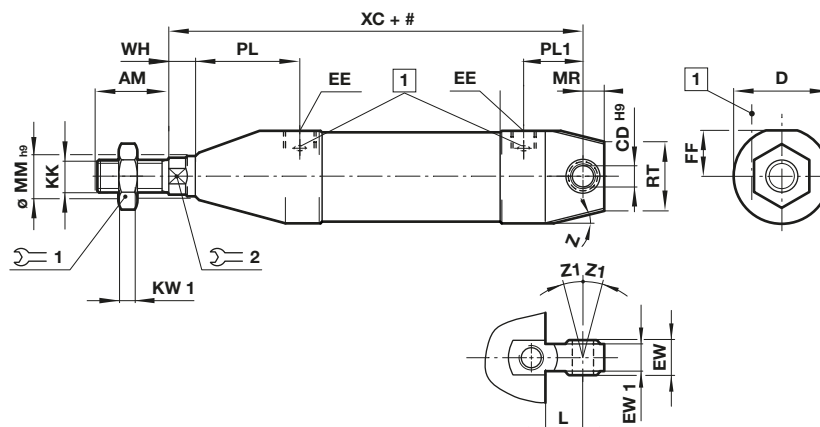
Note: missing dimensions see standard cylinders

Alternative variants
KM/8000/M/R – Cylinder with rear eye mounting
KM/8021/M/R, KM/8026/M/R – Cylinder with rear eye mounting and adjustable cushioning

Dimensions in mm
Projection/First angle

Stroke
1 Cushion screw

Ø	AM	Ø CD	Ø D	EE	EW	FF	KK	L	Ø MM	MR	PL	PL1	RT	WH	XC	Z	1	2	at 0 mm	per 25 mm	Model
		H9			-0,1				h 9												
12	16	6	20	M5	11,9	9	M6	9	6	11,5	23,5	15,5	10	4	75	5 x 45°	10	5	0,106 kg	0,011 kg	KM/8012/M/R/*
16	16	6	20	M5	11,9	9	M6	9	6	10,5	22,5	15	10	5	82	5 x 45°	10	5	0,130 kg	0,012 kg	KM/8016/M/R/*
20	20	8	30	G1/8	15,9	13,5	M8	12	8	12,5	18,5	18,5	13,5	4	95	30°	13	7	0,300 kg	0,018 kg	KM/8020/M/R/*
25	22	8	30	G1/8	15,9	13,5	M10x1,25	12	10	12,5	19,5	26,5	11,5	6	104	30°	17	9	0,360 kg	0,028 kg	KM/8025/M/R/*

* Please insert standard stroke length.

KM/8000/M/UR – Cylinder with universal rear eye mounting
KM/8021/M/UR, KM/8026/M/UR – Cylinder with universal rear eye mounting and adjustable cushioning

Stroke
1 Cushion screw

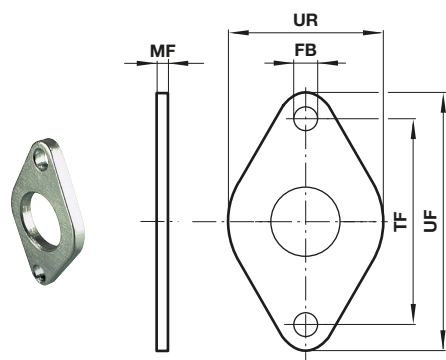
Ø	AM	Ø CD	Ø D	EE	EW	EW1	FF	KK	KW1	L	Ø MM	MR	PL	PL1	RT	WH	XC	Z	Z1	1	2	Model
		H9			-0,1						h 9											
12	16	6	20	M5	9	6,8	9	M6	3	9	6	11,5	23,5	15,5	—	4	75	5 x 45°	13°	10	5	KM/8012/M/UR/*
16	16	8	20	M5	9	6,8	9	M6	3	9	6	10,5	22,5	15	—	5	82	5 x 45°	13°	10	5	KM/8016/M/UR/*
20	20	8	30	G1/8	12	9	13,5	M8	4	12	8	12,5	20,5	18,5	14	4	95	30°	13°	13	7	KM/8020/M/UR/*
25	22	8	30	G1/8	12	9	13,5	M10x1,25	8	12	10	12,5	25,5	19,5	14	6	104	30°	13°	17	9	KM/8025/M/UR/*

* Please insert standard stroke length.

Weights see table on top.

Mountings

Front or rear flange G and B

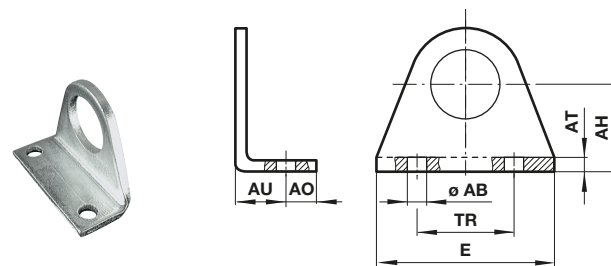


Ø	Ø FB	MF	TF	UF	UR	kg	Model
12/16	5,5	4	40	52	30	0,03	M/P72405
20/25	6,6	5	50	66	40	0,05	M/P72406

Foot C

Conforms to DIN ISO 6432

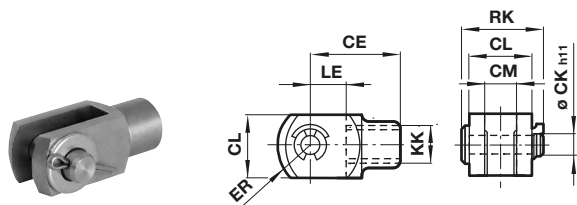
Dimensions in mm
 Projection/First angle



Ø	Ø AB	AH	AO	AT	AU	E	TR	kg	Model
12/16	5,5	20	6	3	13	43	32	0,03	M/P72403
20/25	6,5	25	7,5	4	16	53	40	0,06	M/P72404

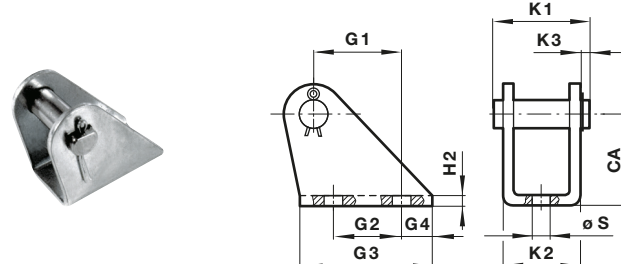
Piston rod clevis F

Conforms to DIN ISO 8140



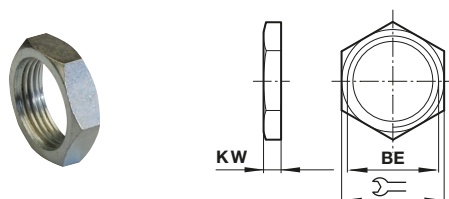
Ø	KK	CE	Ø CK h11	CL	CM	ER	LE	RK	kg	Model
12/16	M6	24	6	12	6	9,5	12	17,5	0,02	KQM/8012/25
20	M8	32	8	16	8	13	16	22	0,06	KQM/8020/25
25	M10x1,25	40	10	20	10	16	20	28	0,10	KQM/55433/25

Rear hinge L



Ø	CA	G1	G2	G3	G4	H2	K1	K2	K3	Ø S	kg	Model
12/16	27	13	15	25	4	3	23	18	3	5,5	0,04	KQM/8012/24
20/25	30	16	20	32	6	4	29,5	24	3	6,6	0,08	KQM/8020/24

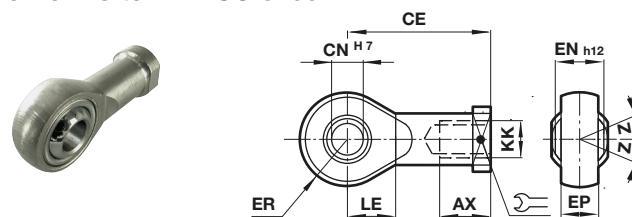
Nose nut N



Ø	BE	KW	kg	Model
12/16	M16x1,5	5	0,01	M/P72398
20/25	M22x1,5	8	0,02	M/P72399

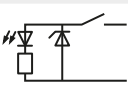
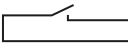
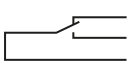
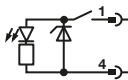
Universal piston rod eye UF

Conforms to DIN ISO 8139



Ø	KK	AX -1	CE	CN H7	EN -0,1	ER	LE	Z	kg	Model
12/16	M6	12	30	6	9	10,5	10	13°	0,02	KQM/8012/32
20	M8	16	36	8	12	12,5	12	13°	0,05	KQM/8020/32
25	M10x1,25	20	43	10	14	14,5	14	13°	0,08	KQM/8032/32

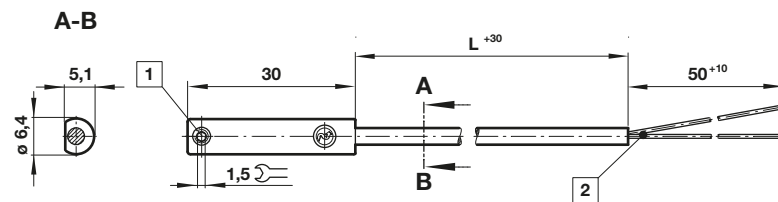
Technical data - Reed switches - additional informations see data sheet N/en 4.3.005

Symbol	Voltage		Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model
	(V a.c.)	(V d.c.)										
	10 ... 240	10 ... 170	180	Closer	-25 ... +80	•	IP66	—	2, 5 or 10	PVC 2 x 0,25	37	M/50/LSU/*V
	10 ... 240	10 ... 170	180	Closer	-25 ... +80	•	IP66	—	5	PUR 2 x 0,25	37	M/50/LSU/5U
	10 ... 240	10 ... 170	180	Closer	-25 ... +150	—	IP66	—	2	Silicon 2 x 0,25	37	TM/50/RAU/2S
	10 ... 240	10 ... 170	180	Changeover	-25 ... +80	—	IP66	—	5	PVC 3 x 0,25	37	M/50/RAC/5V
	10 ... 60	10 ... 60	180	Closer	-25 ... +80	•	IP66	M8 x 1	0,3	PVC 3 x 0,25	16	M/50/LSU/CP *1)

* Insert cable length; *1) Plug-in connector see page 11; Color code: BK = black, BN = brown, BU = blue

Drawings

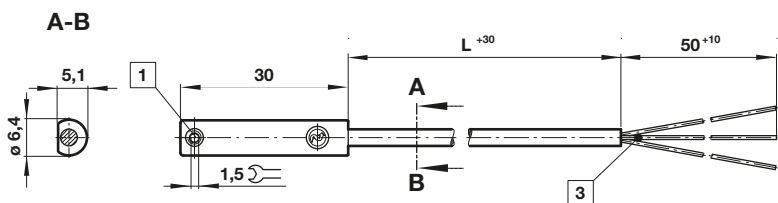
M/50/LSU/*V, M/50/LSU/5U,
TM/50/RAU/2S
Cable length L = 2, 5 or 10 m



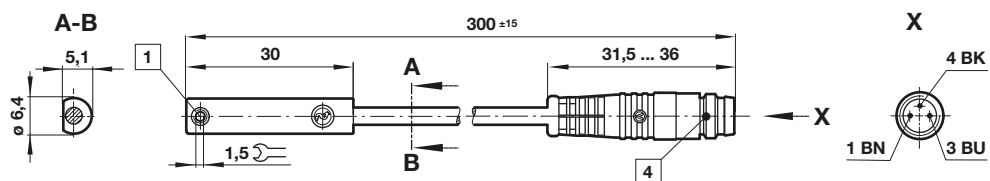
Dimensions in mm
Projection/First angle



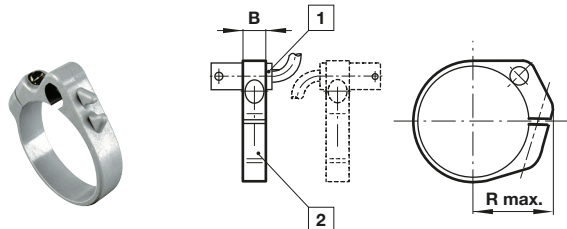
M/50/RAC/5V
Cable length L = 5 m



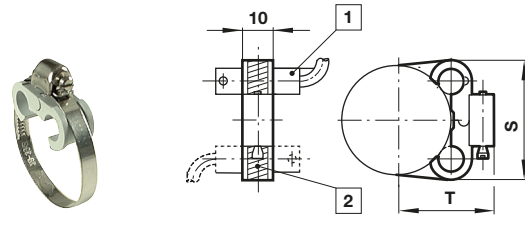
M/50/LSU/CP



- 1 Fixing screw
- 2 + BN = brown; - BU = blue (output)
- 3 - BK = black; + BN = brown; - ≠BU = blue
- 4 Plug M8 x 1, color code: BK = black; BN = brown; BU = blue

Switch mounting brackets - Brackets > 15 mm stroke


- 1 Magnetically operated switch
- 2 Switch mounting bracket

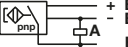
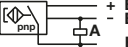
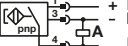
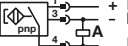
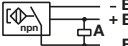
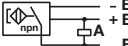
Switch mounting brackets - Brackets < 15 mm stroke


- 1 Magnetically operated switch
- 2 Switch mounting bracket

Ø	B	R max.	kg	Model
10	8	16	0,01	QM/33/010/22
12	8	18	0,01	QM/33/012/22
16	10	20	0,01	QM/33/016/22
20	10	22	0,01	QM/33/020/22
25	10	24	0,01	QM/33/025/22

Ø	S	T	kg	Model
10	27,5	19,5	0,01	QM/33/010/23
12	28,5	21,5	0,01	QM/33/016/23
16	29,5	23,5	0,01	QM/33/016/23
20	29,5	26	0,01	QM/33/020/23
25	31,5	28,5	0,01	QM/33/025/23

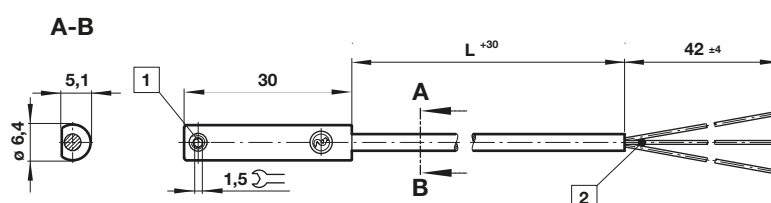
Technical data - Solid state - additional informations see data sheet N/en 4.3.007

Symbol	Voltage (V d.c.)	Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Plug	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 30	150	PNP	-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAP/*V
	10 ... 30	150	PNP	-40 ... +80	•	IP68	—	5	PUR 3 x 0,14	37	M/50/EAP/5U
	10 ... 30	150	PNP	-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CP *1)
	10 ... 30	150	PNP	-40 ... +80	•	IP67	M12 x 1	0,3	PVC 3 x 0,14	16	M/50/EAP/CC *1)
	10 ... 30	150	NPN	-40 ... +80	•	IP67	—	2, 5 or 10	PVC 3 x 0,12	37	M/50/EAN/*V
	10 ... 30	150	Closer	-40 ... +80	•	IP67	M8 x 1	0,3	PVC 3 x 0,14	16	M/50/EAN/CP *1)

* Insert cable length; *1) Plug-in connector below; Color code: BK = black; BN = brown; BU = blue

Drawings

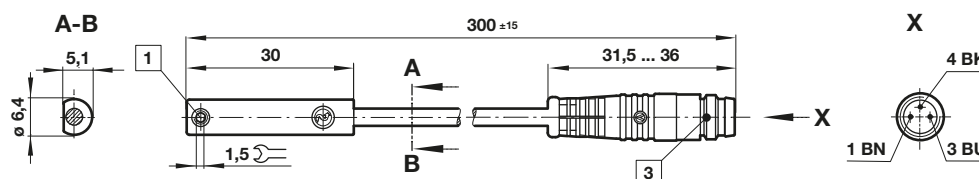
M/50/EAP/*V,
M/50/EAN/*V
Cable length L = 2, 5 or 10 m



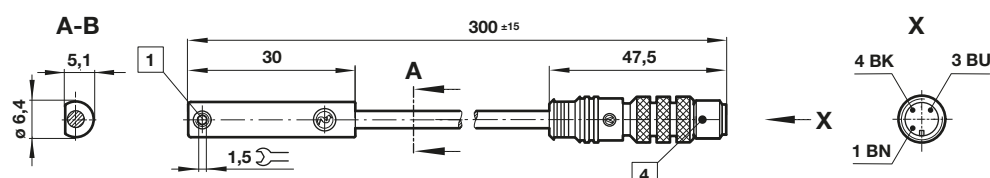
Dimensions in mm
Projection/First angle



M/50/EAP/CP,
M/50/EAN/CP



M/50/EAP/CC



- 1 Fixing screw
- 2 Color code: BK = black; BN = brown; BU = blue
- 3 Plug M8 x 1
- 4 Plug M12 x 1

Accessories

Plug-in connector cable with nut



Outer cover	Cable length (m)	Weight (kg)	Connector	Connector
PVC 3 x 0,25	5 m	0,18	M8 x 1	M/P73001/5
PUR 3 x 0,25	5 m	0,18	M8 x 1	M/P73002/5
PUR 3 x 0,34	5 m	0,21	M12 x 1	M/P34594/5

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under

»Technical features/data«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult

IMI Precision Engineering, Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

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