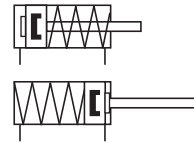


RA/191000/M, .../MX; RA/193000/M, .../MX, Compact cylinder Magnetic piston, single acting

- Ø 20 ... 63 mm
- Conforms to ISO 21287
- M/50 switches can be mounted flush with the profile
- Magnetic piston as standard
- Seals ensure low friction operation and long life



Technical features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

Based on ISO 21287

Note: The basic length of the single acting version is slightly longer than its double acting equivalent

Operation:

RA/191000/M: Single acting, sprung in, magnetic piston, male piston rod thread, buffer cushioning

RA/191000/MX: Single acting, sprung in, magnetic piston, female piston rod thread, buffer cushioning

RA/193000/M: Single acting, sprung out, magnetic piston, male piston rod thread, buffer cushioning

RA/193000/MX: Single acting, sprung out, magnetic piston, female piston rod thread, buffer cushioning

Operating pressure:

2 ... 10 bar (29 ... 145 psi)

Port size:

M5, G1/8

Cylinder diameters:

20, 25, 32, 40, 50 and 63

Standard strokes:

Standard: 5, 10 and 25 mm
Non-standard strokes available (50 mm max.)

Operating temperature:

-5 ... +80°C max. (+23 ... +176°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials:

Materials:
Profile barrel: Anodized aluminium
End covers: Pressure diecast aluminium
Piston rod: Stainless steel
Piston rod seals: PUR
Piston seals: NBR
O-rings: NBR

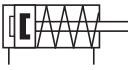
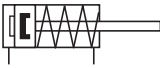
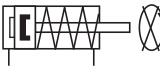
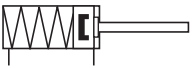
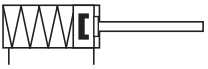
Technical data

Cylinder Ø (mm)	20	25	32	40	50	63
Port size	M 5	M 5	G 1/8	G 1/8	G 1/8	G 1/8
Piston rod Ø (mm)	10	10	12	16	20	20
Piston rod thread	M8x1,25	M8x1,25	M10x1,25	M10x1,25	M12x1,25	M12x1,25
Energy (J) max.	0,20	0,30	0,45	0,75	1,10	1,30
RA/1910**/*						
Theoretical thrusts at 6 bar outstroke (N)	161	264	432	687	1043	1770
Theoretical thrusts F1 instroke (N)	14,5	20	32	44	56,5	74,5
Air consumption at 6 bar outstroke (l/cm)	0,022	0,035	0,056	0,088	0,138	0,218
RA/1930**/*						
Theoretical thrusts at 6 bar instroke (N)	119	197	311	566	906	1582
Theoretical thrusts at F1 bar outstroke (N)	14,5	20	32	44	56,5	74,5
Air consumption at 6 bar instroke (l/cm)	0,017	0,027	0,042	0,074	0,116	0,196

Standard strokes

Cylinder Ø (mm)	Stroke length (mm)		
	5	10	25
20	•	•	—
25	•	•	—
32	—	•	•
40	—	•	•
50	—	•	•
63	—	•	•

Cylinder variants

Symbol	S	Model with magnetic piston	Description	Dimensions	Page
	•	RA/191000/M	Standard cylinder, male piston rod thread	5	
	•	RA/191000/MX	Standard cylinder, female piston rod thread	5	
	•	RA/191000/MU	Cylinder with extended piston rod, male piston rod thread	5	
	•	RA/191000/MUX	Cylinder with extended piston rod, female piston rod thread	5	
		RA/191000/N2	Cylinder with non-rotating piston rod, male piston rod thread	6	
		RA/191000/N2X	Cylinder with non-rotating piston rod, female piston rod thread	6	
	•	RA/193000/M	Standard cylinder, male piston rod thread	5	
	•	RA/193000/MX	Standard cylinder, female piston rod thread	5	
	•	RA/193000/MU	Cylinder with extended piston rod, male piston rod thread	5	
	•	RA/193000/MUX	Cylinder with extended piston rod, female piston rod thread	5	
		RA/193000/N2	Cylinder with non-rotating piston rod, male piston rod thread	6	
		RA/193000/N2X	Cylinder with non-rotating piston rod, female piston rod thread	6	

For cylinder variants S see options selector

Option selector

Piston rod materials

Stainless steel martensitic (1.4021)

Stainless steel austenitic (1.4305)

Operation

Sprung in

Sprung out

Cylinder Ø (mm)

20

25

32

40

50

63

Substitute

R

S

Substitute

1

3

Substitute

020

025

032

040

050

063

★A/19★★★★/★★★/★★★

Strokes (mm)

50 max

Piston rod thread

Female

Male

Variants (magnetic piston)

Standard

Non-rotating piston rod (internal)

Extended piston rod

RA/192*** / MU* / *** / ***

extension (mm)

Substitute

X

None

Substitute

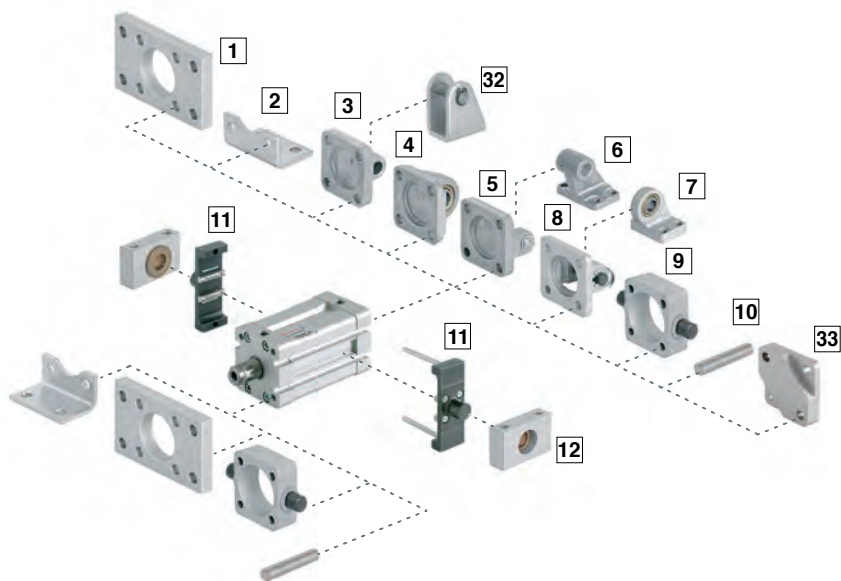
M

N2

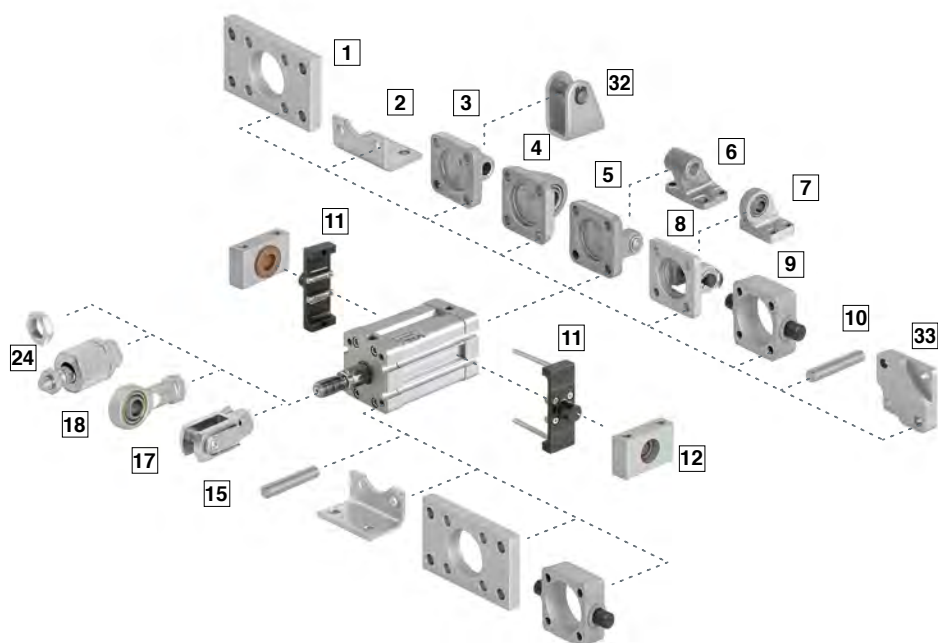
MU

Note: If option is not required, disregard option position within part number eg. RA/191032/M/25. For combinations of cylinder variants consult our technical service.
This options selector explains only the cylinder variants.
Additional variants/options can not be derived from.

Series RA/191000/MX

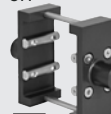


Series RA/191000/M



Mountings

Model	A	B, G	C	D	D2	FH	L2
							
	10	1	2	5	8	9	32
Ø	Page 7	Page 7	Page 7	Page 7	Page 7	Page 8	Page 9
20	—	QA/192020/22	QM/192020/21	—	—	—	QM/8020/44
25	—	QA/192025/22	QM/192025/21	—	—	—	QM/8020/44
32	QM/8032/35	QA/8032/22	QA/192032/21	QA/8032/23	QA/8032/42	QA/8032/34	—
40	QM/8032/35	QA/8040/22	QA/192040/21	QA/8040/23	QA/8040/42	QA/8040/34	—
50	QM/8050/35	QA/8050/22	QA/192050/21	QA/8050/23	QA/8050/42	QA/8050/34	—
63	QM/8050/35	QA/8063/22	QA/192063/21	QA/8063/23	QA/8063/42	QA/8063/34	—

Model	R	S	SW	UH	UR	US	Assembly Kit
							
	3	12	6	11	4	7	33
Ø	Page 8	Page 9	Page 9	Page 8	Page 8	Page 10	Page 10
20	QM/192020/27	—	—	—	—	—	QA/192020/55
25	QM/192025/27	—	—	—	—	—	QA/192025/55
32	QA/8032/27	QA/8032/41	M/P19493	PQA/182032/40	QA/8032/33	M/P40310	QA/192032/55
40	QA/8040/27	QA/8040/41	M/P19494	PQA/182040/40	QA/8040/33	M/P40311	QA/192040/55
50	QA/8050/27	QA/8040/41	M/P19495	PQA/182050/40	QA/8050/33	M/P40312	QA/192050/55
63	QA/8063/27	QA/8063/41	M/P19496	PQA/182063/40	QA/8063/33	M/P40313	QA/192063/55

For cylinders with male piston rod thread

Accessories

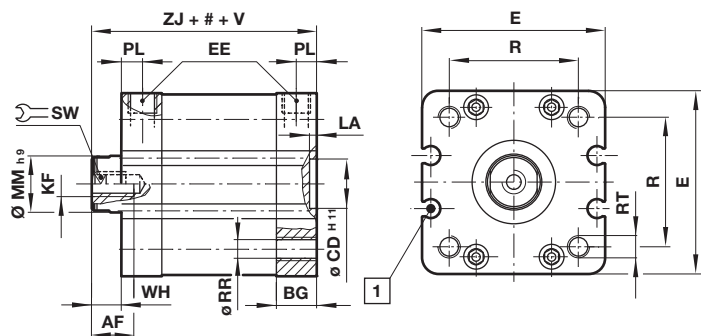
Model	AK	F	N2	UF	Groove cover	Magnetically operated switches	Groove key
							
	18	15	24	17			
Ø	Page 7	Page 8	Page 9	Page 8	Page 10	Page 11 & 12	Page 10
20	QM/8020/38	QM/8020/25	M/P1501/60	QM/8020/32	M/P72725/1000		M/P72816
25	QM/8020/38	QM/8020/25	M/P1501/60	QM/8020/32	M/P72725/1000		M/P72816
32	QM/8025/38	QM/8025/25	M/P1501/89	QM/8025/32	M/P72725/1000		M/P72816
40	QM/8025/38	QM/8025/25	M/P1501/89	QM/8025/32	M/P72725/1000		M/P72816
50	QM/8040/38	QM/8040/25	M/P1501/90	QM/8040/32	M/P72725/1000		M/P72816
63	QM/8040/38	QM/8040/25	M/P1501/90	QM/8040/32	M/P72725/1000		M/P72816

Service kit

Service kit			
			
Ø	Ø	Model	
20	40	QM/192040/00	
25	50	QM/192050/00	
32	63	QM/192063/00	

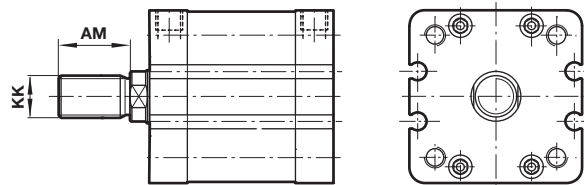
Dimensions

RA/191000/MX – Standard cylinders Sprung in with female piston rod thread



RA/191000/M – Standard cylinders Sprung in with male piston rod thread

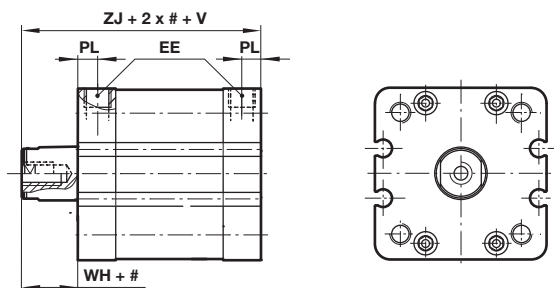
Dimensions in mm
Projection/First angle



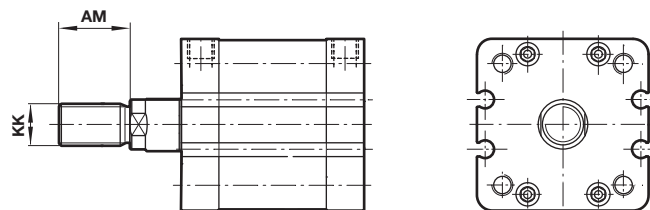
Stroke

1 M/50 – Switches can be mounted flush with the profile

RA/193000/MX – Standard cylinders Sprung out with female piston rod thread



RA/193000/M – Standard cylinders Sprung out with male piston rod thread



Stroke

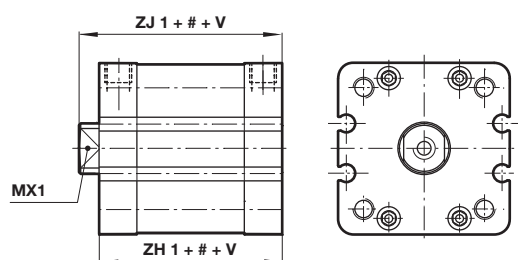
Ø	AF	AM	BG	Ø CD H11	□ E	EE	KF	KK	LA	Ø MM h9	PL
20	10	16	12	10	37	M5	M6	M8 x 1,25	2,5	10	7
25	10	16	13	10	41	M5	M6	M8 x 1,25	2,5	10	7
32	12	19	14,5	14	48	G1/8	M8	M10 x 1,25	2,5	12	7,5
40	12	19	14,5	14	54,5	G1/8	M8	M10 x 1,25	2,5	16	7,5
50	16	22	14	18	66	G1/8	M10	M12 x 1,25	2,5	20	7,5
63	16	22	14	18	76	G1/8	M10	M12 x 1,25	2,5	20	7,5

Ø	□ R	Ø RR	RT	SW	V mm stroke		WH	ZJ	kg at 0 mm	kg per 5 mm	Model
					0 ... 25	26 ... 50					
20	22	4,3	M5	8	17	34	6	43	0,17 kg	0,01 kg	RA/19.020/M.
25	26	4,3	M5	8	18	36	6	45	0,20 kg	0,01 kg	RA/19.025/M.
32	32,5	5,3	M6	10	19	38	7	51	0,30 kg	0,02 kg	RA/19.032/M.
40	38	5,3	M6	13	20	40	7	52	0,40 kg	0,02 kg	RA/19.040/M.
50	46,5	6,8	M8	17	30	60	8	53	0,65 kg	0,03 kg	RA/19.050/M.
63	56,5	6,8	M8	17	30	60	8	57	0,90 kg	0,03 kg	RA/19.063/M.

Cylinder variants

RA/191000/N2X

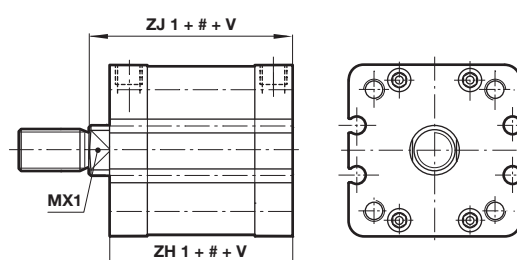
Cylinder with non-rotating piston rod
Sprung in with female piston rod thread



RA/191000/N2

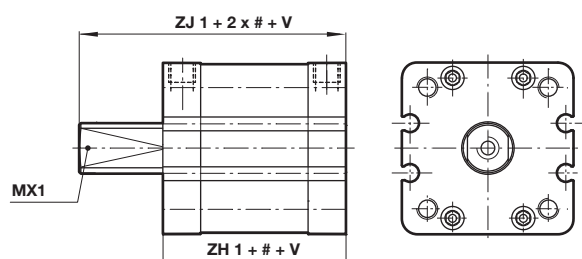
Cylinder with non-rotating piston rod
Sprung in with male piston rod thread

Dimensions in mm
Projection/First angle



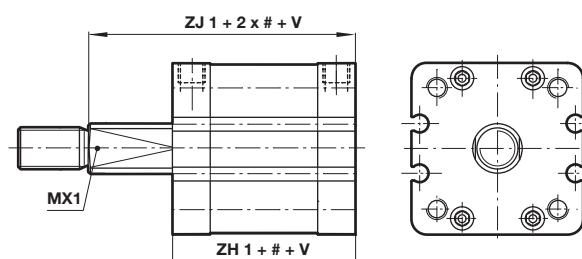
RA/193000/N2X

Cylinder with non-rotating piston rod
Sprung out with female piston rod thread



RA/193000/N2

Cylinder with non-rotating piston rod
Sprung out with male piston rod thread



Missing cylinder dimensions, see previous page 5

Ø	MX1	V mm stroke		ZH1	ZJ1	Weight		Model
		0 ... 25	26 ... 50			at 0 mm	per 5 mm	
20	8	17	34	47	53	0,17 kg	0,01 kg	RA/19.020/N2.
25	8	18	36	49	55	0,20 kg	0,01 kg	RA/19.025/N2.
32	10	19	38	54	61	0,30 kg	0,02 kg	RA/19.032/N2.
40	13	20	40	55	62	0,40 kg	0,02 kg	RA/19.040/N2.
50	16	30	60	55	63	0,65 kg	0,03 kg	RA/19.050/N2.
63	16	30	60	59	67	0,90 kg	0,03 kg	RA/19.063/N2.

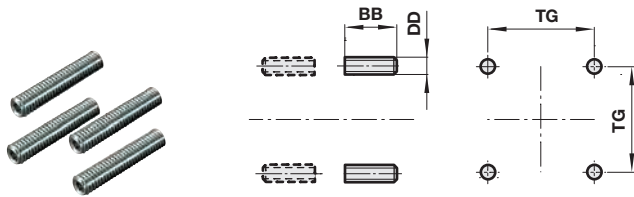
Torque for cylinders RA/19.000/N2.

Ø	Torque max. (Nm)	Model
20	0,15	RA/19*020/N2.
25	0,25	RA/19*025/N2.
32	0,40	RA/19*032/N2.
40	0,75	RA/19*040/N2.
50	1,50	RA/19*050/N2.
63	1,50	RA/19*063/N2.

Mountings

Front or rear stud mounting A

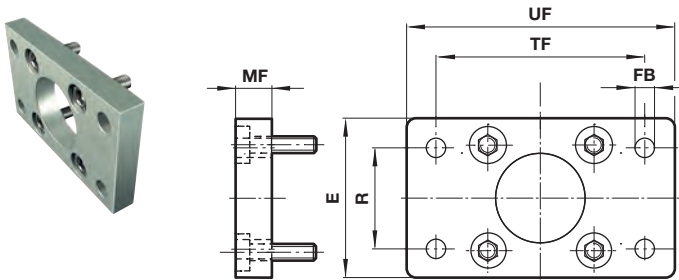
Conforms to ISO 6431, type MX1



Ø	BB	DD	TG	kg	Model (A)
32/40	17	M6	32,5/38	0,02	QM/8032/35
50/63	23	M8	46,5/56,5	0,05	QM/8050/35

Front flange B, Front flange G

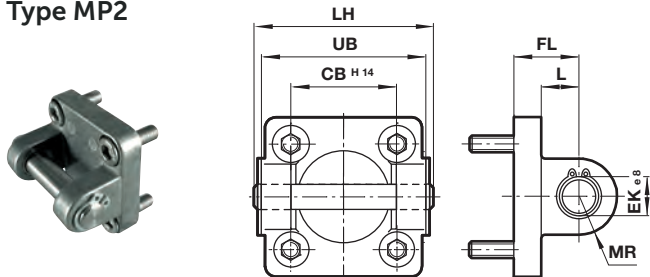
Conforms to ISO 21 287 (Ø 20 and 25 mm) and
DIN ISO 6431 or VDMA 24562 Part 2
(Ø 32 to 63 mm), Type MF1 and MF2



Ø	E	Ø FB	MF	R	TF	UF	kg	Model (B/G)
20	36	6,6	8	—	55	70	0,16	QA/192020/22
25	40	6,6	8	—	60	76	0,2	QA/192025/22
32	50	7	10	32	64	80	0,25	QA/8032/22
40	55	9	10	36	72	90	0,35	QA/8040/22
50	65	9	12	45	90	110	0,7	QA/8050/22
63	75	9	12	50	100	125	0,8	QA/8063/22

Rear clevis D

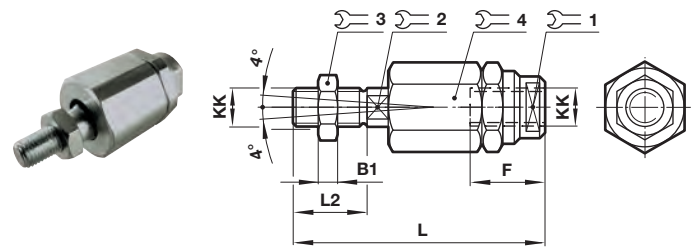
Conforms to DIN ISO 6431 and VDMA 24562 Part 2,
Type MP2



Ø	CB H14	Ø EK e8	FL	L	LH	MR	UB	kg	Model (D)
32	26	10	22	13	52	9	45	0,11	QA/8032/23
40	28	12	25	16	60	12	52	0,16	QA/8040/23
50	32	12	27	17	68	12	60	0,22	QA/8050/23
63	40	16	32	22	79	15	70	0,34	QA/8063/23

Piston rod swivel AK

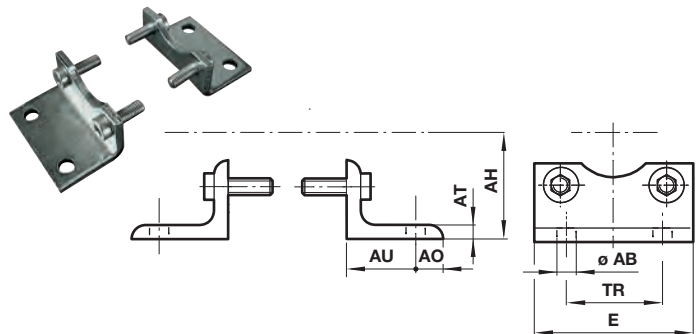
Dimensions in mm
Projection/First angle



Ø	KK	B1	F	L	L2	1	2	3	4	kg	Model (AK)
20/25	M8x1,25	4	18	55	16	10	7	13	17	0,05	QM/8020/38
32/40	M10x1,25	5	26	73	20	19	12	17	30	0,2	QM/8025/38
50/63	M12x1,25	6	26	77	24	19	12	19	30	0,2	QM/8040/38

Foot C

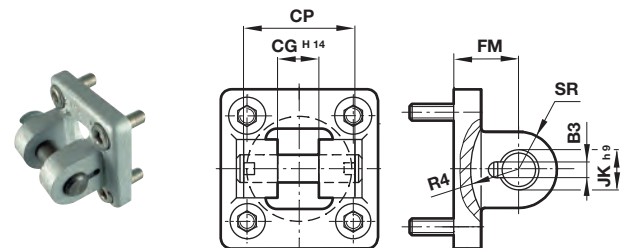
Conforms to ISO 21287, type MS1



Ø	Ø AB	AH	AO	AT	AU	E	TR	kg	Model (C)
20	7	27	6	4	16	36	22	0,03	QM/192020/21
25	7	29	7	4	16	40	26	0,04	QM/192025/21
32	7	33,5	7	4	16	48	32	0,15	QA/192032/21
40	10	38	9	4	18	54,5	36	0,18	QA/192040/21
50	10	45	9	5	21	66	45	0,3	QA/192050/21
63	10	50	9	5	21	76	50	0,39	QA/192063/21

Rear clevis D2

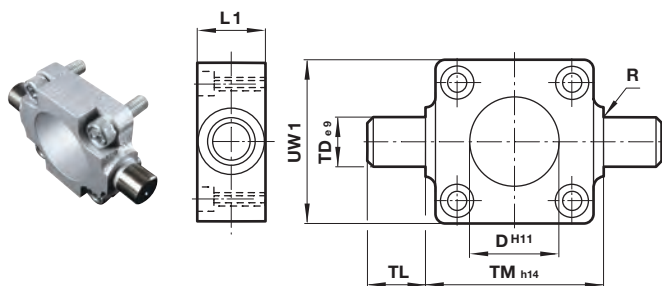
Conforms to VDMA 24562 Part 2



Ø	B1 H14	B2	B3	Ø EK h9	FL	R1	R2	kg	Model (D2)
32	14	34	3,3	10	22	11	17	0,20	QA/8032/42
40	16	40	4,3	12	25	12	20	0,23	QA/8040/42
50	21	45	4,3	16	27	14,5	22	0,36	QA/8050/42
63	21	51	4,3	16	32	18	25	0,55	QA/8063/42

Front or rear detachable trunnion FH

Conforms to VDMA 24562 part 2, type MT 5/6



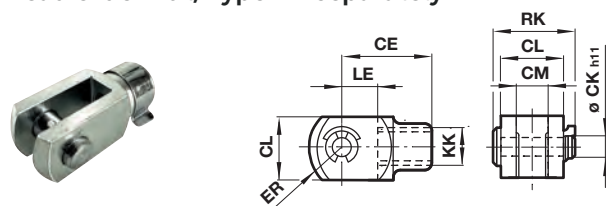
Ø	Ø D h11	L1	R	Ø TD e9	TL	TM h14	UW1	kg	Model (FH)
32	30	16	1	12	12	50	45	0,20	QA/8032/34
40	35	20	1,6	16	16	63	55	0,38	QA/8040/34
50	40	24	1,6	16	16	75	65	0,60	QA/8050/34
63	45	24	1,6	20	20	90	75	1,10	QA/8063/34

Piston rod clevis F

Conforms to DIN ISO 8140

For cylinders with male piston rod thread order nut, Type N2 separately

Dimensions in mm
Projection/First angle

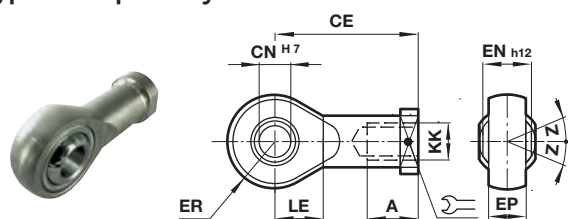


Ø	KK	CE	Ø CK h11	CL	CM	ER	LE	RK	kg	Model (F)
20/25	M8x1,25	32	8	16	8	13	16	22	0,06	QM/8020/25
32/40	M10x1,25	40	10	20	10	16	20	28	0,09	QM/8025/25
50/63	M12x1,25	48	12	24	12	19	24	32	0,13	QM/8040/25

Universal piston rod eye UF

Conforms to DIN ISO 8139

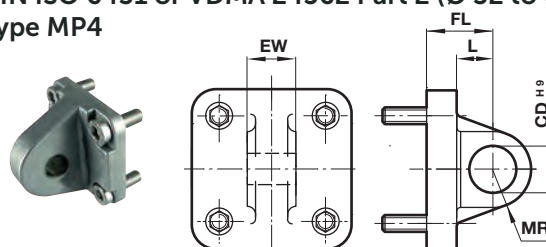
For cylinders with male piston rod thread order nut, Type N2 separately



Ø	Thread KK	AX	CE	Ø CN H7	EN -0,1	ER	LE	Z	kg	Model (UF)
20/25	M8x1,25	16	36	8	12	11	13	5°	0,05	QM/8020/32
32/40	M10x1,25	20	43	10	14	14	15	13°	0,09	QM/8025/32
50/63	M12x1,25	22	50	12	16	16	17	13°	0,13	QM/8040/32

Rear eye R

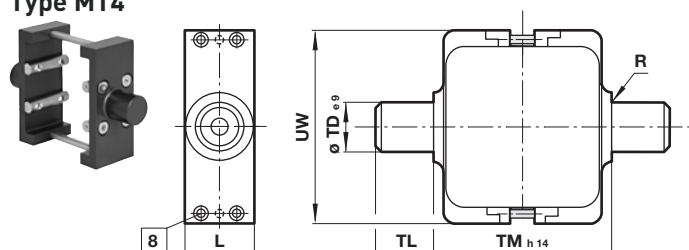
Conforms to ISO 21 287 (Ø 20 and 25 mm) and DIN ISO 6431 or VDMA 24562 Part 2 (Ø 32 to 63 mm), Type MP4



Ø	Ø CD H9	EW	FL	L	MR	kg	Model (R)
20	8	15,8	20	14	8	0,02	QM/192020/27
25	8	15,8	20	14	8	0,03	QM/192025/27
32	10	25,8	22	13	9	0,09	QA/8032/27
40	12	27,8	25	16	12	0,11	QA/8040/27
50	12	31,7	27	17	12	0,17	QA/8050/27
63	16	39,7	32	22	15	0,24	QA/8063/27

Adjustable trunnion mounting UH

Conforms to DIN ISO 6431 and VDMA 24562 Part 2, Type MT4

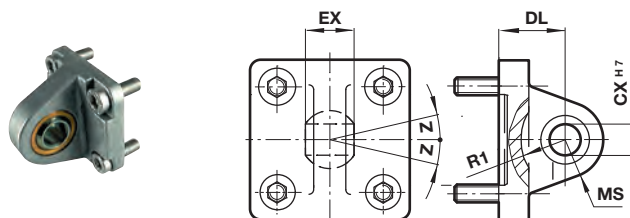


Ø	L	R	Ø De9	TL	TM h14	UW	Torque max. (Nm)	kg	Model (UH)
32	25	1	12	12	50	58	2	0,16	PQA/182032/40
40	28	1,6	16	16	63	65	3,5	0,35	PQA/182040/40
50	28	1,6	16	16	75	80	3,5	0,65	PQA/182050/40
63	36	1,6	20	20	90	96	5	0,85	PQA/182063/40

Note: Style UH: It is most important that the locking screws which secure the mounting to the cylinder barrel are tightened to the torque figures shown in the table. For maximum energy input, consult our Technical Service.

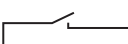
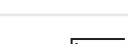
Universal rear eye UR

Conforms to VDMA 24562 Part 2



Ø	Ø CN H7	EN	ER	FL	R	Z	kg	Model (UR)
32	10	14	16	22	14,5	13°	0,15	QA/8032/33
40	12	16	18	25	18	13°	0,25	QA/8040/33
50	16	21	21	27	19	15°	0,40	QA/8050/33
63	16	21	23	32	24	15°	0,55	QA/8063/33

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

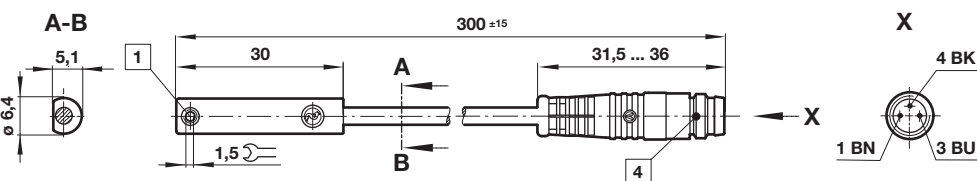
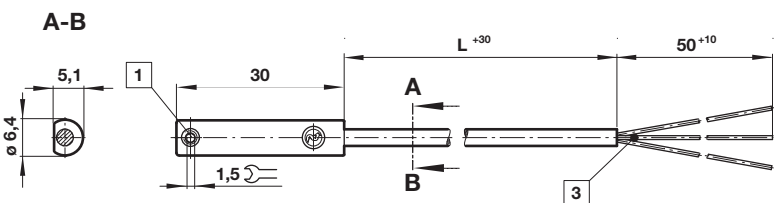
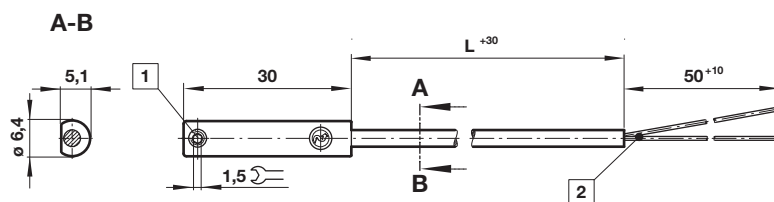
M/50/LSU/*V, M/50/LSU/5U,
TM/50/RAU/2S
Cable length L = 2, 5 or 10 m



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



M/50/LSU/CP

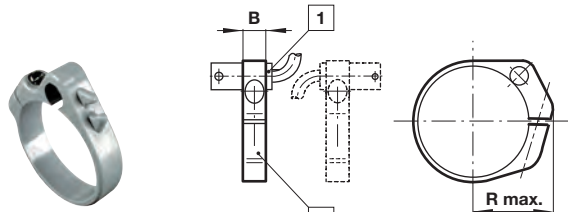


- 1 Fixing screw
2 + BN = brown; - BU = blue (output)
3 - BK = black; + BN = brown; - BU = blue
4 Plug M8 x 1, color code: BK = black; BN = brown; BU = blue

Dimensions in mm
Projection/First angle

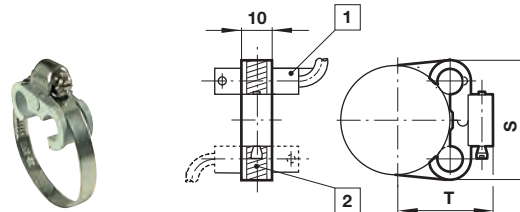


Switch mounting brackets - Brackets > 15 mm stroke



- 1 Magnetically operated switch
2 Switch mounting bracket

Switch mounting brackets - Brackets < 15 mm stroke

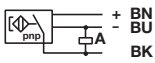
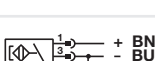
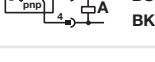
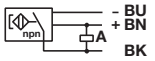
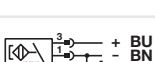
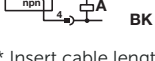


- 1 Magnetically operated switch
2 Switch mounting bracket

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

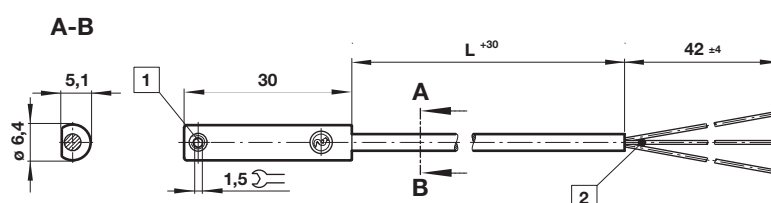
Technical data - Solid state - additional informations see data sheet N/en 4.3.007

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

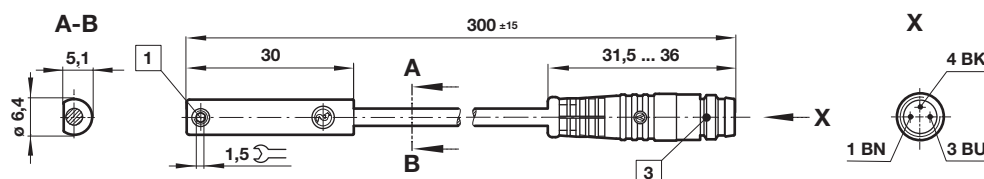
M/50/EAP/*V,
M/50/EAN/*V
Cable length L = 2, 5 or 10 m



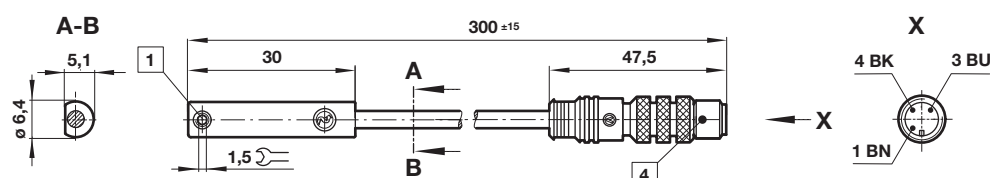
Dimensions in mm
Projection/First angle



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 Norgren.

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.