

## Series HM Mini cylinders ISO 6432, double acting

### Technical details

<b>Operating pressure</b>	1 ... 10 bar
<b>Temperature range</b>	-30°C ... +80°C ( 0 ... +150°C for high temperature version)
<b>Medium</b>	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.
<b>Materials</b>	Cylinder tube: stainless steel End caps: Al (anodized) Piston rod: stainless steel Seals: PU, NBR
	Cylinders in accordance with 2014/34/EU (ATEX) available. (Chapter 13)



Double acting pneumatic cylinder with magnetic piston and built-in cushioning rings or adjustable cushions. Standard stroke lengths in table below, additional lengths on request.

### Versions

	HM, HMS, HMZ double acting, with magnetic piston		HMDE double acting, double end piston rod, with magnetic piston
	HMP double acting, adjustable cushioning, with magnetic piston		HMPDE double acting, double end piston rod, adjustable cushioning, with magnetic piston
	HDH double acting, high temperature version		
	HDPH double acting, adjustable cushioning, high temperature version		

### Order code

<b>H****-**-**-****</b>																						
<table border="1"> <tr><td>Series</td></tr> <tr><td>HM     standard</td></tr> <tr><td>HMP*</td></tr> <tr><td>HMDE*</td></tr> <tr><td>HMPDE*</td></tr> <tr><td>HDH**</td></tr> <tr><td>HDPH*</td></tr> <tr><td>HMS*    lateral air connection, rear</td></tr> <tr><td>HMZ*    central air connection, rear</td></tr> </table>	Series	HM     standard	HMP*	HMDE*	HMPDE*	HDH**	HDPH*	HMS*    lateral air connection, rear	HMZ*    central air connection, rear	<table border="1"> <tr><td>Options</td></tr> <tr><td>ATEX    cylinders in accordance with 2014/34/EU (ATEX)</td></tr> <tr><td>Stroke (mm)</td></tr> <tr><td>XXX     max. stroke see technical data</td></tr> <tr><td>Standard# 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400 mm</td></tr> <tr><td>Piston Ø</td></tr> <tr><td>08      8 mm</td></tr> <tr><td>10      10 mm</td></tr> <tr><td>12      12 mm</td></tr> <tr><td>16      16 mm</td></tr> <tr><td>20      20 mm</td></tr> <tr><td>25      25 mm</td></tr> </table>	Options	ATEX    cylinders in accordance with 2014/34/EU (ATEX)	Stroke (mm)	XXX     max. stroke see technical data	Standard# 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400 mm	Piston Ø	08      8 mm	10      10 mm	12      12 mm	16      16 mm	20      20 mm	25      25 mm
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\* only for Ø 16, 20 and 25 mm

\*\* not for Ø 8 mm

# only for series HM and HMP in consideration of max. stroke

# Series HM

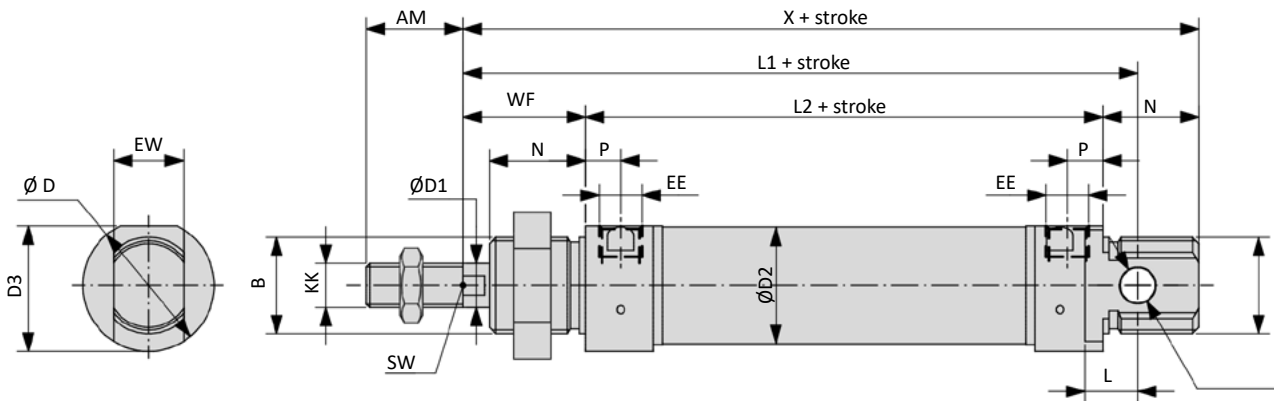
## Mini cylinders ISO 6432, double acting

### Technical data

Model-no.:	HM-08-...	HM-10-...	HM-12-...	Hxx-16-...	Hxx-20-...	Hxx-25-...
Piston Ø (mm)	8	10	12	16	20	25
Force at 6 bar (N)	Extension	27	42	61	109	265
	Retraction	20	36	46	93	223
Connection	M5	M5	M5	M5	G1/8	G1/8
Piston rod thread	M4	M4	M6	M6	M8	M10 x 1.25
Max. stroke (mm)	100	200	500	900	900	900
Cushioning length (mm)*	-	-	-	15.5	17	19.5

\* only for series HMP, HMPDE, HDPH

### Dimensions series HM, HMP, HDH, HDPH



Piston Ø	AM	B	Ø CD	Ø D	Ø D1	Ø D2	D3	EE
8	12	M12 x 1,25	4	16	4	9,27	15	M5
10	12	M12 x 1,25	4	16	4	11,27	15	M5
12	16	M16 x 1,5	6	19	6	13,27	18	M5
16	16	M16 x 1,5	6	19*	6	17,27	18	M5
20	20	M22 x 1,5	8	27	8	21,27	25,5	G1/8
25	22	M22 x 1,5	8	30	10	26,5	28,5	G1/8

\* 21 mm for HMP, HMPDE, HDPH

Piston Ø	EW	KK	L	L1	L2	N	P	SW	WF	X
8	8	M4	6	64	46	12	5	-	16	74
10	8	M4	6	64	46	12	5	-	16	74
12	12	M6	9	75	48	18	5	5	22	88
16	12	M6	9	82	53	18*	4,5	5	22	93
20	16	M8	12	95	67	20	8	7	24	111
25	16	M10 x 1,25	12	104	68	22	8	9	28	118

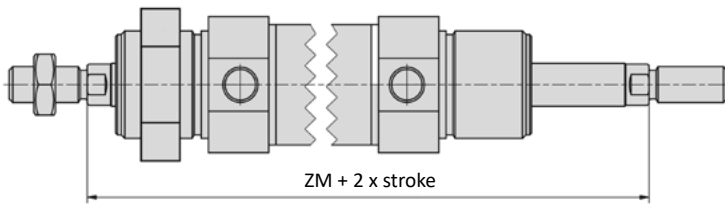
\* 17 mm for HMP, HMPDE, HDPH

# Series HM

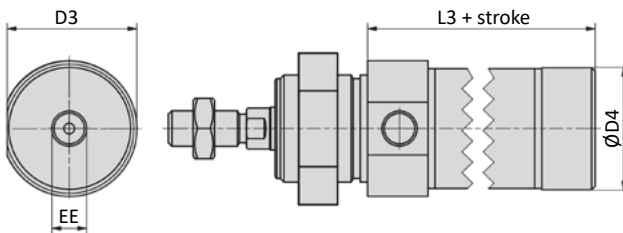
Mini cylinders ISO 6432, double acting

## Additional dimensions Series HMDE, HMPDE, HMZ, HMS

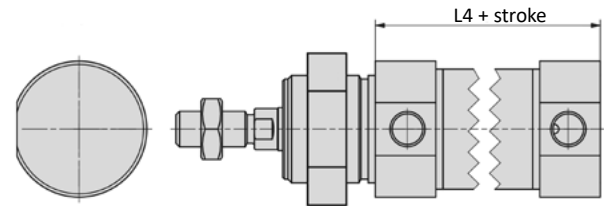
double end piston rod



Series HMZ



Series HMS

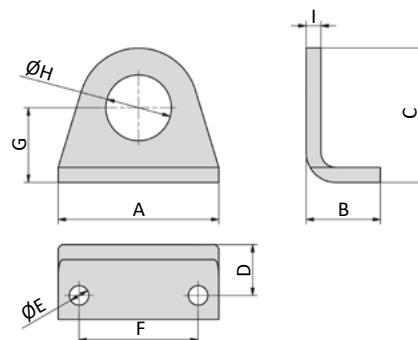


Piston $\varnothing$	ZM	EE	$\varnothing D$	$\varnothing D4$	L3	L4
16	97	M5	19	17.2	52	52.5
20	115	G1/8	27	22.2	65	67
25	124	G1/8	30	27	66	68

## Series HM

### Mounting accessories

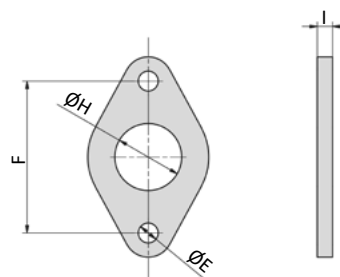
#### RA-xx Foot mount



Model-no.:	for cylinder $\varnothing$	A	B	C	D	$\varnothing E$	F	G	$\varnothing H$	I
RA-10	8, 10	35	16	26	11	4.5	25	16	12	3
RA-16	12, 16	42	20	32.5	14	5.5	32	20	16	4
RA-25	20, 25	54	25	45	17	6.6	40	25	22	5

material: steel, zinc plated

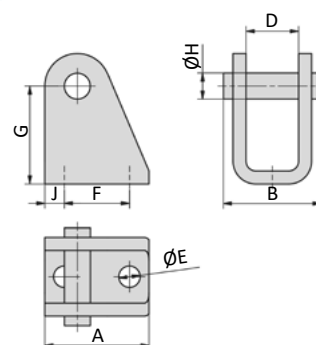
#### RB-xx Flange mount



Model-no.:	for cylinder $\varnothing$	$\varnothing E$	F	$\varnothing H$	I
RB-10	8, 10	4.5	30	12	3
RB-16	12, 16	5.5	40	16	4
RB-25	20, 25	6.6	50	22	5

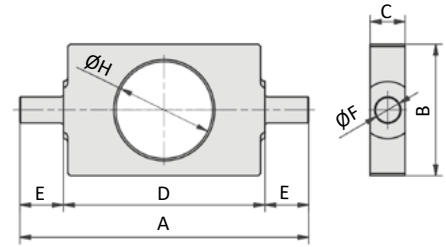
material: steel, zinc plated

#### RC-xx Clevis mount



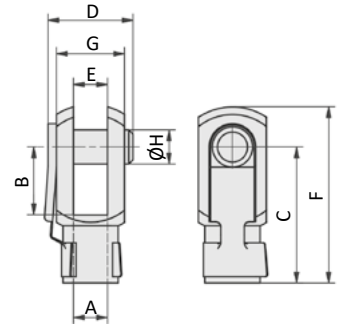
Model-no.:	for cylinder $\varnothing$	A	B	D	$\varnothing E$	F	G	$\varnothing H$	J
RC-10	8, 10	20	17	8.1	4.5	12.5	24	4	5
RC-16	12, 16	25	23	12.1	5.5	15	27	6	5
RC-30	20, 25	32	30	16.1	6.6	20	30	8	6

material: steel, zinc plated, 2 snap rings are included

**RH-xx Trunnion mount**


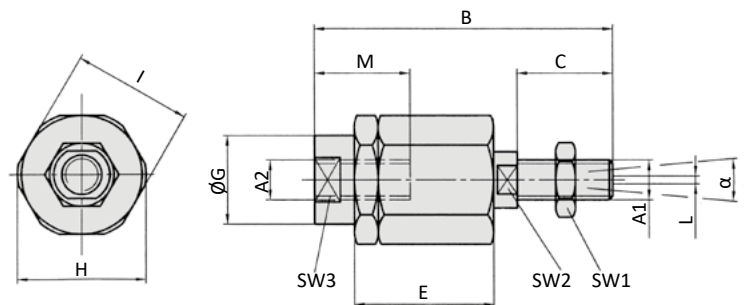
Model-no.:	for cylinder $\varnothing$	A	B	C	D	E	$\varnothing F$	$\varnothing H$
RH-10	8, 10	38	20	6	26	6	4	12
RH-16	12, 16	58	25	8	38	10	6	16
RH-25	20, 25	66	30	8	46	10	6	22

material: steel, zinc plated

**RD-xx Rod clevis**


Model-no.:	for cylinder $\varnothing$	A	B	C	D	E	F	G	$\varnothing H$
RD-10	8, 10	M4	8	16	11.5	4	21	8	4
RD-16	12, 16	M6	12	24	16	6	31	12	6
RD-20	20	M8	16	32	22	8	42	16	8
RD-25	25	M10 x 1.25	20	40	26	10	52	20	10

material: steel, zinc plated

**FK-xx Flexible coupling**


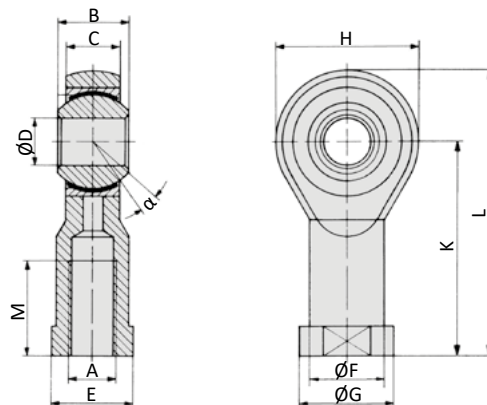
Model-no.:	for cylinder $\varnothing$	A1, A2	B	C	D	E	$\varnothing G$	H	I	L	M	SW1	SW2	SW3	$\alpha$
FK-16	12, 16	M6	35	11	2.5	17.5	8.5	14.5	13	1	12.5	10	5	7	6°
FK-20	20	M8	57	21	5	26	12.5	19	17	2	16	13	7	11	8°
FK-32	25	M10 x 1.25	71.5	20	7.5	35	22	32	30	2	22	17	12	19	8°

material: steel, zinc plated

## Series HM

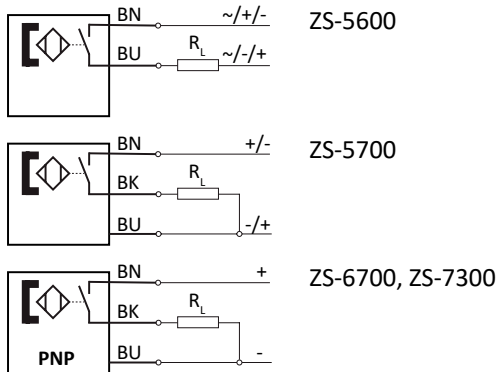
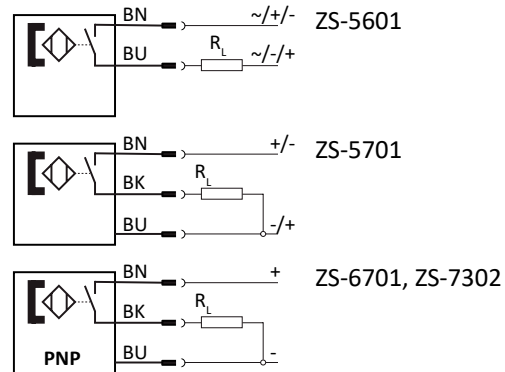
### Mounting accessories

#### RO-xx Rod eye



Model-no.:	for cylinder $\varnothing$	A	B	C	$\varnothing D$	E	$\varnothing F$	$\varnothing G$	H	K	L	M	$\alpha$
RO-16	12, 16	M6	9	6.75	6	11	10	13	20	30	40	12	13°
RO-20	20	M8	12	9	8	14	12.5	16	24	36	48	16	14°
RO-25	25	M10 x 1.25	14	10.5	10	17	15	19	28	43	57	20	13°

materials: steel, zinc plated, bearing steel, bronze bushing

**Proximity sensors with cable**

**Proximity sensors with plug**

**Technical data**

Model-no.:	ZS-5600	ZS-5601	ZS-5700	ZS-5701
<b>Design</b>	2-pole Reed sensor	2-pole Reed sensor	3-pole Reed sensor	3-pole Reed sensor
<b>Contact function</b>	NO	NO	NO	NO
<b>Rated operational voltage</b>	5 ... 240 V AC / DC	5 ... 60 V AC / DC	5 ... 30 V DC	5 ... 30 V DC
<b>Rated operational current I<sub>E</sub></b>	3 ... 100 mA	3 ... 100 mA	≤ 500 mA	≤ 500 mA
<b>Max. voltage drop at I<sub>E</sub></b>	≤ 2.5	≤ 2.5	≤ 0.1	≤ 0.1
<b>Breaking capacity</b>	10 W	10 W	10 W	10 W
<b>Cable length</b>	3 m	0.3 m with M8 connection	5 m	0.3 m with M8 connection
<b>Temperature range</b>	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C
<b>Protection</b>	IP 67	IP 67	IP 67	IP 67
<b>Switching status indication</b>	LED red	LED red	LED yellow	LED yellow
Model-no.:	ZS-6700	ZS-6701	ZS-7300	ZS-7302
<b>Design</b>	3-pole inductive	3-pole inductive	3-pole inductive	3-pole inductive
<b>Contact function</b>	NO	NO	NO	NO
<b>Output</b>	PNP	PNP	PNP	PNP
<b>Rated operational voltage</b>	5 ... 30 V DC	5 ... 30 V DC	10 ... 30 V DC	10 ... 30 V DC
<b>Rated operational current I<sub>E</sub></b>	≤ 200 mA	≤ 200 mA	≤ 100 mA	≤ 100 mA
<b>Max. voltage drop at I<sub>E</sub></b>	≤ 1.0	≤ 1.0	≤ 2.5	≤ 2.5
<b>Breaking capacity</b>	6 W	6 W	3 W	3 W
<b>Cable length</b>	3 m	0.3 m with M8 connection	6 m	0.3 m with M12 connection
<b>Temperature range</b>	-10 ... +70°C	-10 ... +70°C	-20 ... +60°C	-20 ... +60°C
<b>Protection</b>	IP 67	IP 67	IP 67	IP 67
<b>Switching status indication</b>	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

## Series ZS

### Proximity sensors


#### 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-550
Design	 <p>sensor mounting</p>