

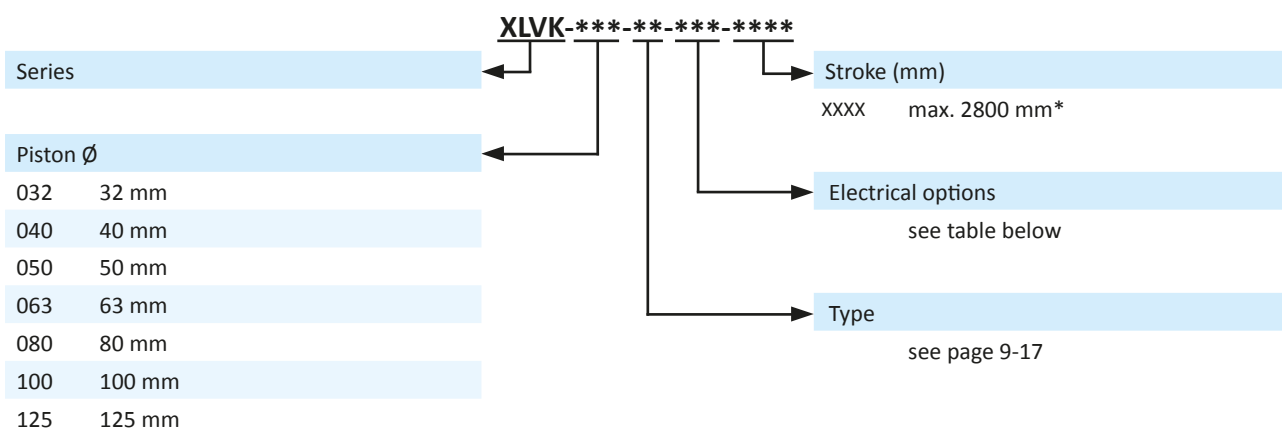
Technical details

Series cylinder	XL
Series valve	KM-09 (up to Ø 63 mm), KM-10 (up from Ø 80 mm)
Operating pressure	3 ... 10 bar
Temperature range	-10°C ... +70°C
Max. stroke	2800 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.
Protection	IP 65 according to EN 60529



Double acting AI-profile cylinder with integrated sensor grooves, adjustable cushions and magnetic piston for proximity sensors. The sensors can be installed directly into the sensor grooves of the AI-profile. The cylinder includes a 5/2- or 5/3-way valve with a high flow rate and compact dimensions. Standard stroke lengths in table below, additional lengths on request.

Order code



* For longer stroke lengths please check the max buckling load.

Electrical options

Nominal voltage	Power consumption	Specifics	Plug connection*1	-xxx Manual override on same side of ports	
				2 and 4	1, 3 and 5
12 V DC	4.2 W		Form B industrial norm	-411	-441
12 V DC	2.2 W	max. 8 bar	Form B industrial norm	-431	-461
24 V DC	4.2 W		Form B industrial norm	-412	-442
24 V DC	4.8 W		M 12	-012	-042
24 V DC	2.2 W	max. 8 bar	Form B industrial norm	-432	-462
24 V DC	2.5 W	max. 8 bar	M 12	-032	-062
24 V AC	7/4 VA		Form B industrial norm	-422	-452
115 V AC	7/4 VA		Form B industrial norm	-426	-456
230 V AC	7/4 VA		Form B industrial norm	-427	-457

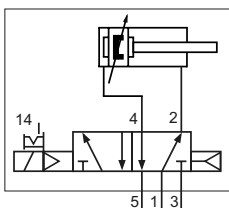
*1 Plug socket not included, suitable plug sockets see page 4-38.

Series XLVK

ISO 15552

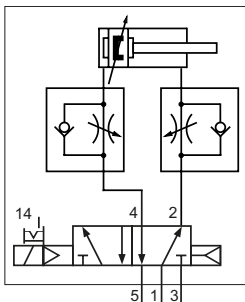
Types

single solenoid valve, normally retracted



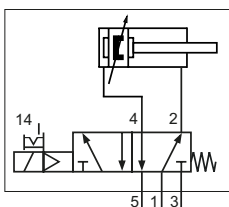
01
valve with air spring return, cylinder piston rod steel hard chrome plated

03
valve with air spring return, cylinder piston rod stainless steel



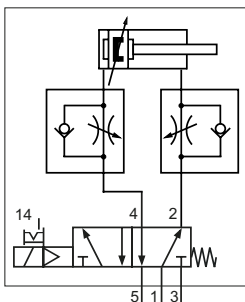
05
valve with air spring return, cylinder piston rod steel hard chrome plated, with mounted flow controls

07
valve with air spring return, cylinder piston rod stainless steel, with mounted flow controls



02
valve with mechanical spring return, cylinder piston rod steel hard chrome plated

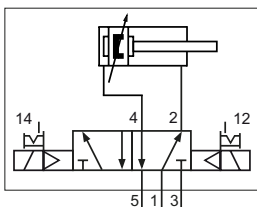
04
valve with mechanical spring return, cylinder piston rod stainless steel



06
valve with mechanical spring return, cylinder piston rod steel hard chrome plated, with mounted flow controls

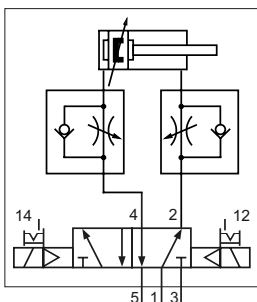
08
valve with mechanical spring return, cylinder piston rod stainless steel, with mounted flow controls

double solenoid valve



20
cylinder piston rod steel hard chrome plated

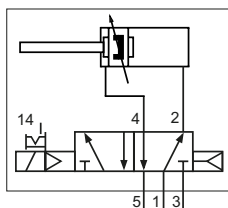
21
cylinder piston rod stainless steel



22
cylinder piston rod steel hard chrome plated, with mounted flow controls

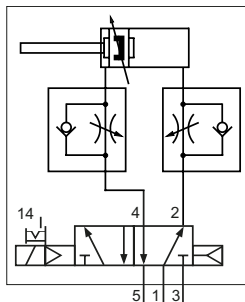
23
cylinder piston rod stainless steel, with mounted flow controls

single solenoid valve, normally extended



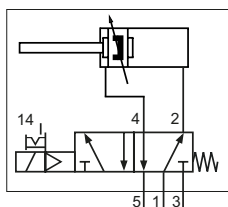
10
valve with air spring return, cylinder piston rod steel hard chrome plated

12
valve with air spring return, cylinder piston rod stainless steel



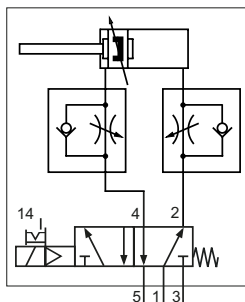
15
valve with air spring return, cylinder piston rod steel hard chrome plated, with mounted flow controls

17
valve with air spring return, cylinder piston rod stainless steel, with mounted flow controls



11
valve with mechanical spring return, cylinder piston rod steel hard chrome plated

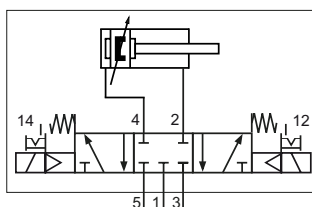
13
valve with mechanical spring return, cylinder piston rod stainless steel



16
valve with mechanical spring return, cylinder piston rod steel hard chrome plated, with mounted flow controls

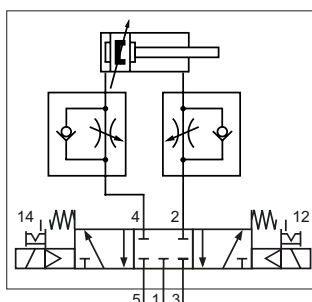
18
valve with mechanical spring return, cylinder piston rod stainless steel, with mounted flow controls

5/3-way, center position closed



25
cylinder piston rod steel hard chrome plated

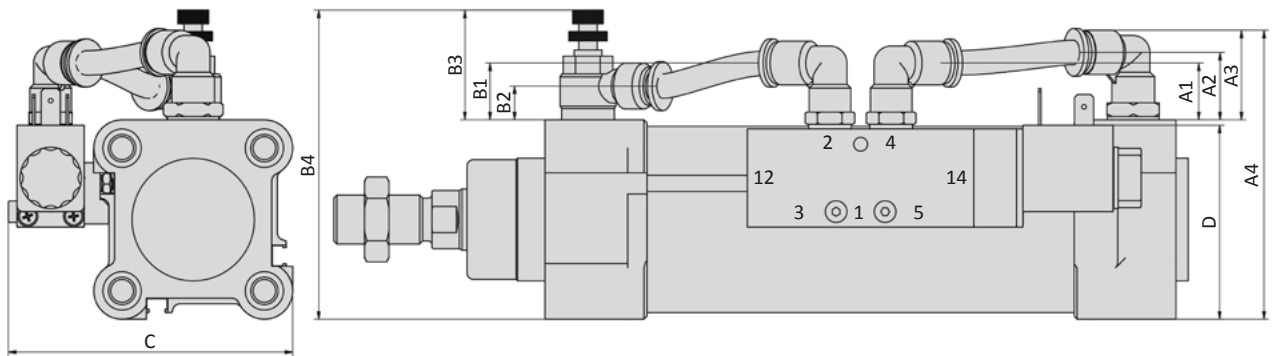
26
cylinder piston rod stainless steel



27
cylinder piston rod steel hard chrome plated, with mounted flow controls

28
cylinder piston rod stainless steel, with mounted flow controls

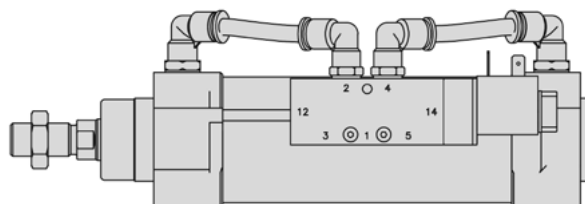
Dimensions



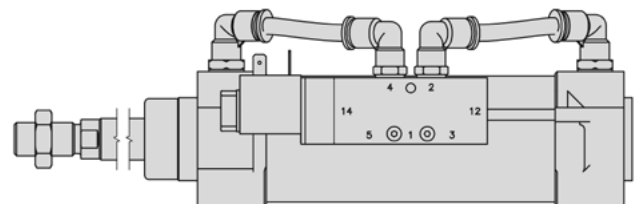
Piston Ø	A1	A2	A3	A4	B1	B2	B3 _{max}	B4 _{max}	C	D
32	20	21	28.5	76.5	20	9.5	34.5	81.5	76.5	47.7
40	18.8	22	29.5	83.5	18.8	11	39.5	93.5	83.3	52.5
50	18.6	22	29.5	94.5	18.6	11	39.5	102.5	92.9	63.3
63	24	18.9	31.5	106.5	24	11.4	44	118	106.5	78.9
80	22.8	18.9	30	124	26.4	13	44	137.5	132.9	86.5
100	35.4	25.8	45	156	35.4	14.5	49.5	159.5	151.8	112.5
125	26.3	25.3	36	175	16.3	14	49.5	187.5	178.4	131.4*

*versions with flow controls D = 121.4

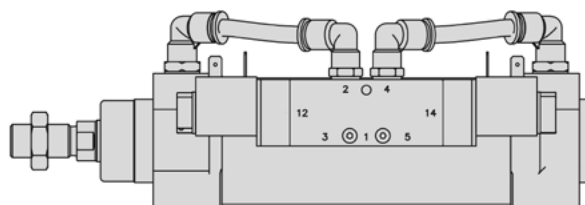
single solenoid valve, normally retracted



single solenoid valve, normally extended



double solenoid valve, 5/3-way-valve

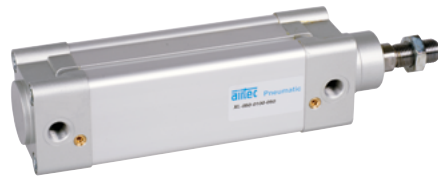


Series XL

ISO 1552, double acting

Technical details

Operating pressure	1 ... 10 bar
Temperature range	-20°C ... +80°C (XLH: -10°C ... +150°C, XLC/ XLCD: -40°C ...+80°C)
Max. stroke	2800 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: Al (anodized) End caps: Al-die-cast (painted) Piston rod: steel hard chrome plated (optional 1.4301) Seals: PU, NBR (optional FKM)
	Cylinders in accordance with 2014/34/EU (ATEX) available. (Chapter 13)



Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and magnetic piston for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile. Standard stroke lengths in table below, additional lengths on request.

Versions

	050, 054, 000, 004 double acting, adjustable cushioning, with magnetic piston		450, 454, 400, 404 double acting, double end piston rod, adjustable cushioning, with magnetic piston
	152, 102 double acting, adjustable cushioning		552, 502 double acting, double end piston rod, adjustable cushioning

Order code

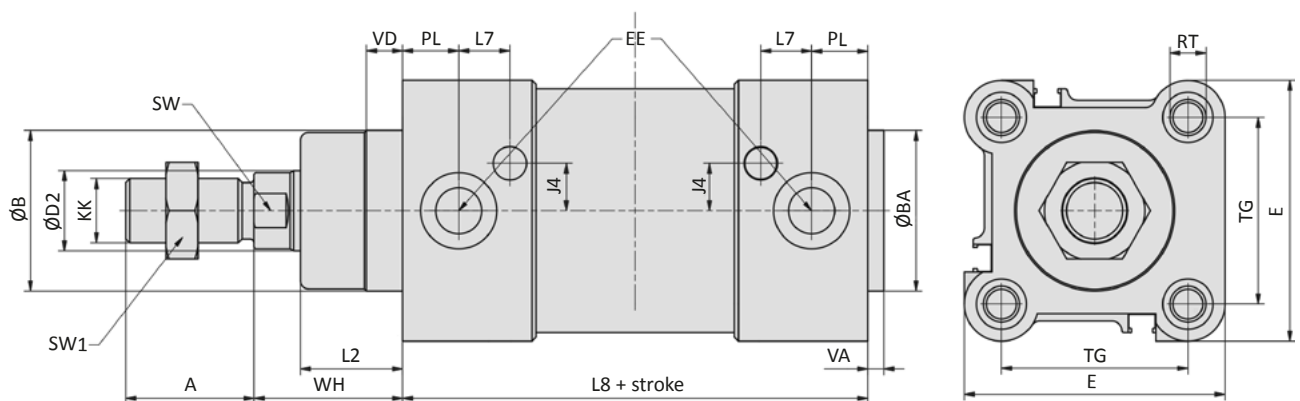
Series		Options	
XL	standard	ATEX	cylinders in accordance with 2014/34/EU (ATEX)
XLC	low temperature version	E8	piston rod seal E8, two-part, with plastic scraper
XLCD	low temperature version, with metal scraper		
XLD	with metal scraper		
XLH	high temperature version		
XLL	low friction version		
Piston Ø		Versions	
032	32 mm	050	standard version
040	40 mm	450	standard version
050	50 mm	000	piston rod stainless steel
063	63 mm	400	piston rod stainless steel
080	80 mm	054	piston rod seal FKM
100	100 mm	454	piston rod seal FKM
125	125 mm	004	piston rod stainless steel , piston rod seal FKM
		404	piston rod stainless steel , piston rod seal FKM
		152	high temperature version (without magnetic piston)
		552	high temperature version (without magnetic piston)
		102	high temperature version, piston rod stainless steel (without magnetic piston)
		502	high temperature version, piston rod stainless steel (without magnetic piston)
		Stroke (mm)	
		XXXX	max. 2800 mm*
		Standard	25, 40, 50, 80, 125, 160, 200, 250, 320, 400, 500 mm

Not all combinations are possible and available.

* For longer stroke lengths please check the max buckling load.

Technical data

Model-no.:	XL-032-...	XL-040-...	XL-050-...	XL-063-...	XL-080-...	XL-100-...	XL-125-...	
Piston Ø (mm)	32	40	50	63	80	100	125	
Force at 6 bar (N)	Extension	434	678	1060	1682	2713	4239	6623
	Retraction	373	570	890	1513	2448	3974	6189
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)	27	29	32	32	32	32	42	

Dimensions series XL


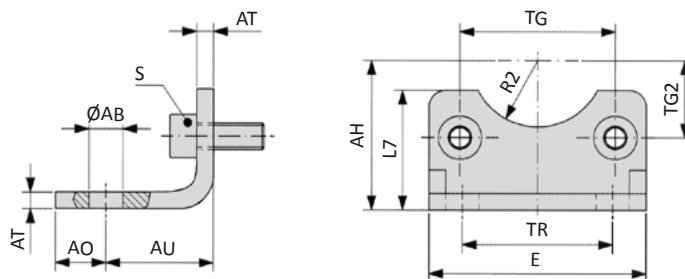
Piston Ø	A	Ø B	Ø BA	Ø D2	E	EE	J4	KK	L2
32	22	30	30	12	47	G1/8	6	M10 x 1.25	18
40	24	35	35	16	54	G1/4	9	M12 x 1.25	22
50	32	40	40	20	63	G1/4	8	M16 x 1.5	25.5
63	32	45	45	20	74	G3/8	9.5	M16 x 1.5	25
80	40	45	45	25	93.5	G3/8	14	M20 x 1.5	35
100	40	55	55	25	110	G1/2	15	M20 x 1.5	38
125	54	60	60	32	137.5	G1/2	15	M27 x 2	46

Piston Ø	L7	L8	PL	RT	SW	SW1	TG	VA	VD	WH
32	11.5	94	12.5	M6	10	17	32.5	4	9.5	26
40	13	105	14	M6	13	19	38	4	9.5	30
50	12.75	106	14	M8	17	24	46.5	4	9.5	37
63	14.5	121	16.5	M8	17	24	56.5	4	9.5	37
80	13.75	128	17	M10	22	30	72	4	10	46
100	15.5	138	18	M10	22	30	89	4	10	51
125	20	160	18	M12	27	41	110	6	11	65

Piston Ø (mm)	32	40	50	63	80	100	125
Weight 0 mm stroke (kg)	0.617	0.925	1.421	1.950	3.250	4.396	6.391
Weight each 100 mm stroke (kg)	0.286	0.403	0.528	0.597	0.861	0.946	1.517

Series XL Mounting accessories

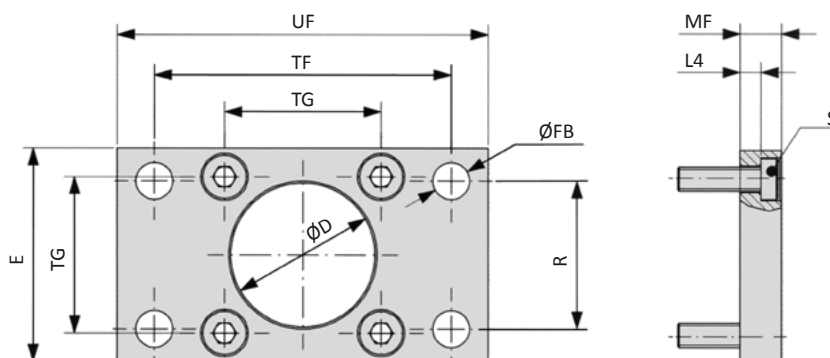
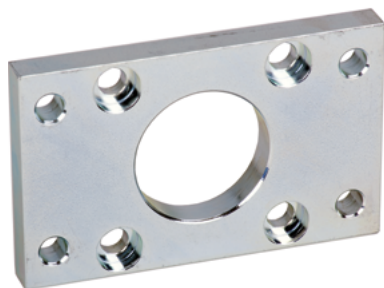
XLB-xxx-01 Foot mount



Model-no.:	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
XLB-032-01	7	32	11	24	4	45	30	15	M6 x 16	32.5	16.25	32
XLB-040-01	10	36	8	28	4	52	30	17.5	M6 x 16	38	19	36
XLB-050-01	10	45	15	32	5	65	36	20	M8 x 20	46.5	23.25	45
XLB-063-01	10	50	13	32	5	75	35	22.5	M8 x 20	56.5	28.25	50
XLB-080-01	12	63	14	41	6	95	47	22.5	M10 x 20	72	36	63
XLB-100-01	14.5	71	16	41	6	115	53	27.5	M10 x 20	89	44.5	75
XLB-125-01	16.5	90	25	45	8	140	70	30	M12 x 25	110*	55	90
<i>tolerances and adjustments</i>	H14	JS16		± 0.2				H15		± 0.2 *± 0.3		JS14

material: steel, zinc plated; 2 x 2 screws in accordance with EN ISO 4762 are included

XLB-xxx-02 Flange mount



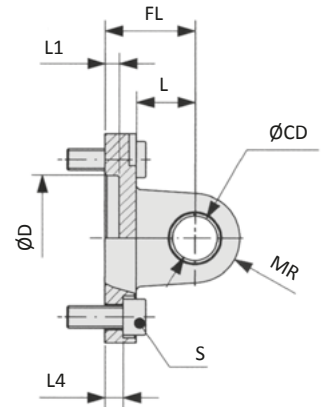
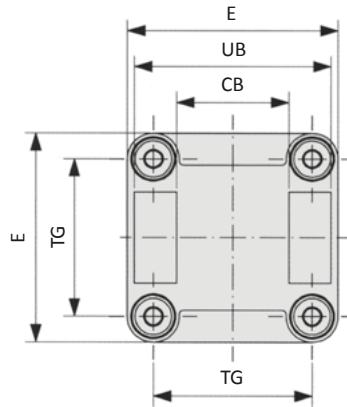
Model-no.:	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
XLB-032-02	30	45	7	5	10	32	M6 x 20	64	32.5	80
XLB-040-02	35	52	9	5	10	36	M6 x 20	72	38	90
XLB-050-02	40	65	9	6.5	12	45	M8 x 20	90	46.5	110
XLB-063-02	45	75	9	6.5	12	50	M8 x 20	100	56.5	120
XLB-080-02	45	95	12	9	16	63	M10 x 25	126	72	150
XLB-100-02	55	115	14	9	16	75	M10 x 25	150	89	170
XLB-125-02	60	140	16	10.5	20	90	M12 x 25	180	110*	205
<i>tolerances and adjustments</i>	H11		H13	- 0.5	JS14	JS14		JS14	± 0.2 *± 0.3	

material: steel, zinc plated; 4 screws in accordance with DIN 7984 are included

XLB-xxx-04 Clevis mount with bushing



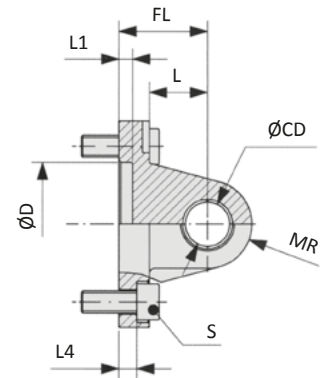
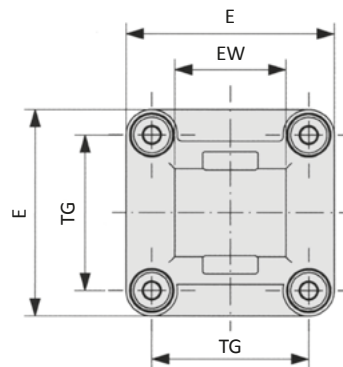
Inclusive clevis pin
order no: XLB-xxx-48



Model-no.:	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
XLB-032-04	26	10	30	45	22	13	5	5.5	10	M6 x 20	32.5	45
XLB-040-04	28	12	35	52	25	16	5	5.5	12	M6 x 20	38	52
XLB-050-04	32	12	40	65	27	16	5	6.5	12	M8 x 20	46.5	60
XLB-063-04	40	16	45	75	32	21	5	6.5	16	M8 x 20	56.5	70
XLB-080-04	50	16	45	95	36	22	5	10	16	M10 x 25	72	90
XLB-100-04	60	20	55	115	41	27	5	10	20	M10 x 25	89	110
XLB-125-04	70	25	60	140	50	30	7	10	25	M12 x 25	110*	130
<i>tolerances and adjustments</i>	H14	H9	H11		± 0.2			± 0.5			± 0.2 *± 0.3	h13

materials: Al, bushing steel and PTFE; 4 screws in accordance with EN ISO 4762 are included

XLB-xxx-05 Swivel mount

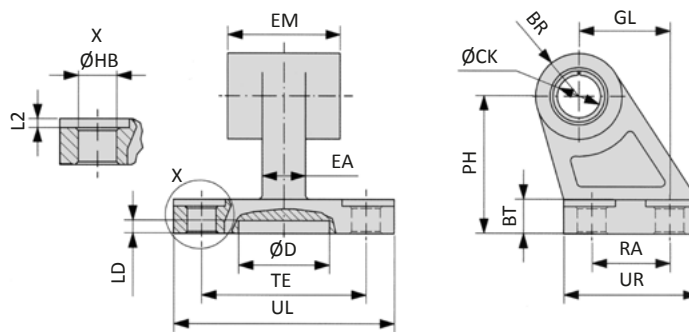


Model-no.:	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
XLB-032-05	10	30	45	26	22	13	5	5.5	10	M6 x 20	32.5
XLB-040-05	12	35	52	28	25	16	5	5.5	12	M6 x 20	38
XLB-050-05	12	40	65	32	27	16	5	6.5	12	M8 x 20	46.5
XLB-063-05	16	45	75	40	32	21	5	6.5	16	M8 x 20	56.5
XLB-080-05	16	45	95	50	36	22	5	10	16	M10 x 25	72
XLB-100-05	20	55	115	60	41	27	5	10	20	M10 x 25	89
XLB-125-05	25	60	140	70	50	30	7	10	25	M12 x 25	110*
<i>tolerances and adjustments</i>	H9	H11			± 0.2			± 0.5			± 0.2 *± 0.3

materials: Al, bushing steel and PTFE; 4 screws in accordance with EN ISO 4762 are included

Series XL Mounting accessories

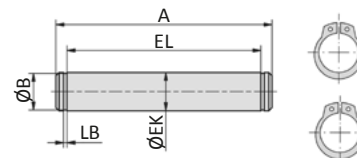
XLB-xxx-06 Swivel mount 90°



Model-no.:	BR	BT	ØCK	Ø D	EA	EM	GL	ØHB	L2	LD	PH	RA	TE	UL	UR
XLB-032-06	10	8	10	21	10	26	21	6.6	1.6	3	32	18	38	51	31
XLB-040-06	11	10	12	21	15	28	24	6.6	1.6	3	36	22	41	54	35
XLB-050-06	13	12	12	21	16	32	33	9	1.6	3	45	30	50	65	45
XLB-063-06	15	14	16	21	16	40	37	9	1.6	3	50	35	52	67	50
XLB-080-06	15	14	16	21	20	50	47	11	2.5	3	63	40	66	86	60
XLB-100-06	19	17	20	11	20	60	55	11	2.5	3	71	50	76	96	70
XLB-125-06	22.5	20	25	21	30	70	70	14	3.2	3	90	60	94	124	90
<i>tolerances and adjustments</i>			H9				JS14	H13			JS15	JS14	JS14		

materials: Al, bushing steel and PTFE

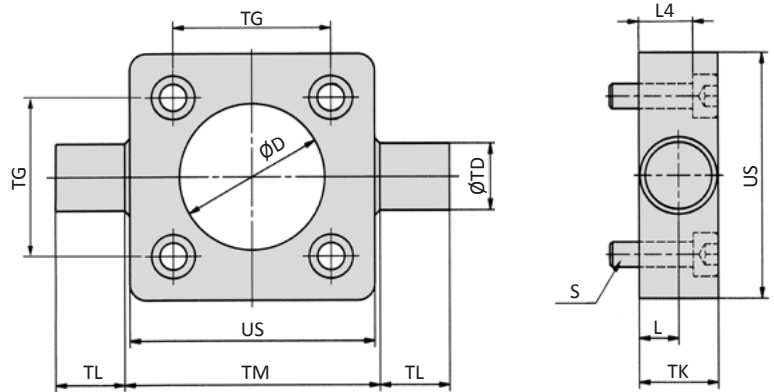
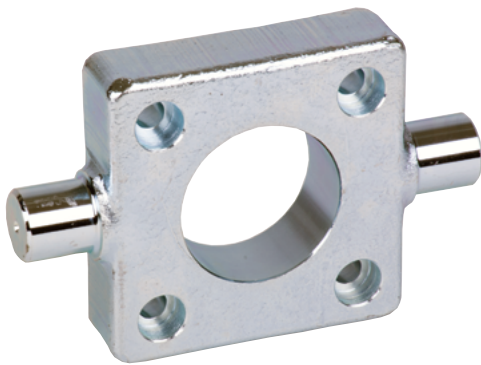
XLB-xxx-08 Clevis pin



Model-no.:	A	Ø B	Ø EK	EL	LB
XLB-032-08	53	9.6	10	46	1.1
XLB-040-08	60	11.5	12	53	1.1
XLB-050-08	68	11.5	12	61	1.1
XLB-063-08	78	15.2	16	71	1.1
XLB-080-08	98	15.2	16	91	1.1
XLB-100-08	118	19	20	111	1.3
XLB-125-08	139	23.9	25	132*	1.3
<i>tolerances and adjustments</i>			e8	+2 *+3	

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

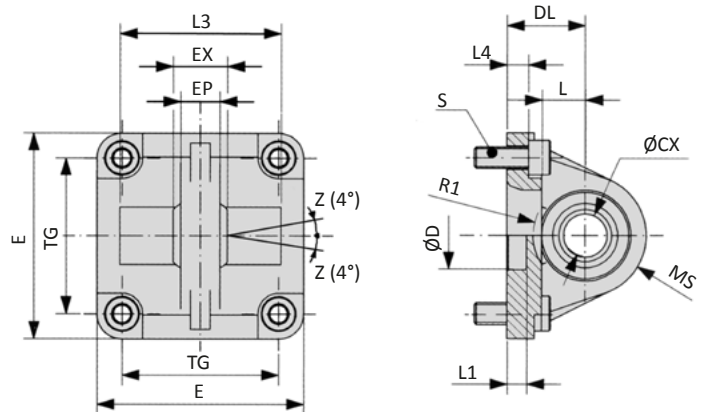
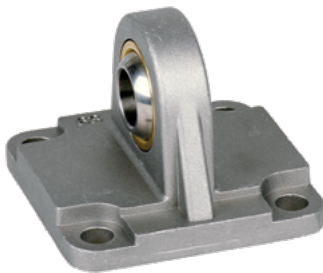
XLB-xxx-11 Trunnion mount



Model-no.:	Ø D	L	L4	S	Ø TD	TG	TK	TL	TM	US
XLB-032-11	30	6.5	8	M6 x 20	12	32.5	14	12	50	46
XLB-040-11	35	9	13	M6 x 25	16	38	19	16	63	59
XLB-050-11	40	9	11	M8 x 25	16	46.5	19	16	75	69
XLB-063-11	45	11.5	16	M8 x 30	20	56.5	24	20	90	84
XLB-080-11	45	11.5	14	M10 x 30	20	72	24	20	110	102
XLB-100-11	55	14	19	M10 x 35	25	89	29	25	132	125
XLB-125-11	60	15	18	M12 x 35	25	110	30	25	160	150
<i>tolerances and adjustments</i>	H 11	+ 0.2			e9	± 0.2		h14	h14	

material: steel, zinc plated; 4 screws in accordance with EN ISO 4762 are included

XLB-xxx-12 Swivel mount with spherical bearing

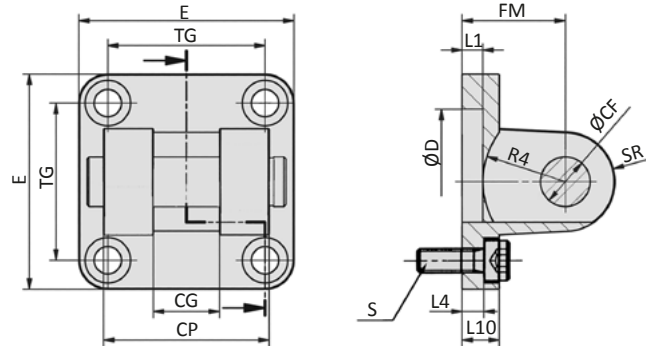
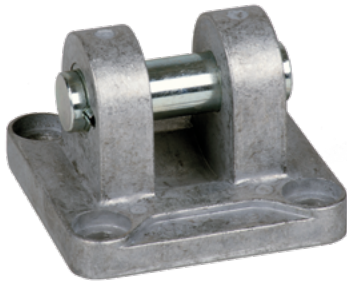


Model-no.:	Ø CX	Ø D	DL	E	EP	EX	L	L1	L3	L4	MS	R1	S	TG
XLB-032-12	10	30	22	45	10.5	14	12	7	-	5.5	16	-	M6 x 20	32.5
XLB-040-12	12	35	25	52	12	16	15	7	-	5.5	18	-	M6 x 20	38
XLB-050-12	16	40	27	65	15	21	15	7	51	6.5	21	19	M8 x 20	46.5
XLB-063-12	16	45	32	75	15	21	20	7	-	6.5	23	-	M8 x 20	56.5
XLB-080-12	20	45	36	95	18	25	20	9	74	10	28	24	M10 x 25	72
XLB-100-12	20	55	41	115	18	25	25	9	-	10	30	-	M10 x 25	89
XLB-125-12	30	60	50	140	25	37	30	9	-	10	40	-	M12 x 25	110*
<i>tolerances and adjustments</i>	H7	H11	± 0.2			± 0.1				± 0.5				± 0.2 *± 0.3

materials: Al, bearing steel, bronze bushing; 4 screws in accordance with EN ISO 4762 are included

Series XL Mounting accessories

XLB-xxx-14 Clevis mount small with pin



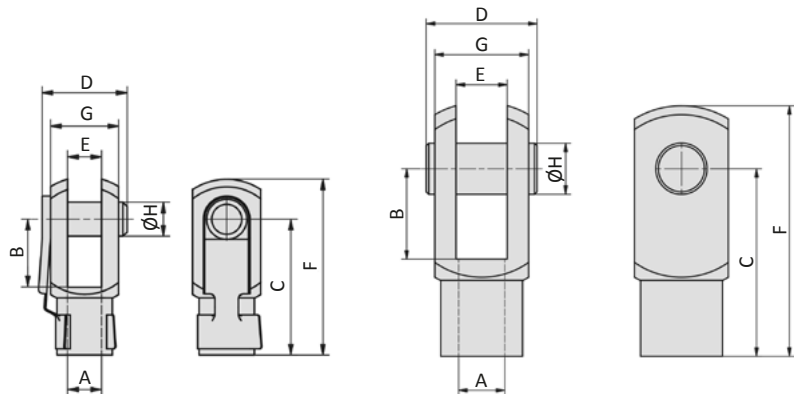
Model-no.:	Ø CF	CG	CP	Ø D	E	FM	L1	L4	L10	R4	S	SR	TG
XLB-032-14	10	14	34	30	45	22	5	5.5	9	17	M6 x 20	10	32.5
XLB-040-14	12	16	40	35	52	25	5	5.5	9	20	M6 x 20	12	38
XLB-050-14	16	21	45	40	65	27	5	6.5	11	22	M8 x 20	14	46.5
XLB-063-14	16	21	51	45	75	32	5	6.5	11	25	M8 x 20	18	56.5
XLB-080-14	20	25	65	45	95	36	5	10	14	30	M10 x 25	20	72
XLB-100-14	20	25	75	55	115	41	5	10	14	32	M10 x 25	22	89
XLB-125-14	30	37	97	60	140	50	7	10	20	42	M12 x 25	25	110*
<i>tolerances and adjustments</i>	F7	D10	d12	H11		± 0.2		± 0.5					± 0.2 *± 0.3

materials: Al, bushing steel and PTFE, clevis pin steel, zinc plated; 4 screws in accordance with EN ISO 4762 are included

RD-xx, FD-xxx Rod clevis

Spring loaded pin (RD-25, FD-40...80)

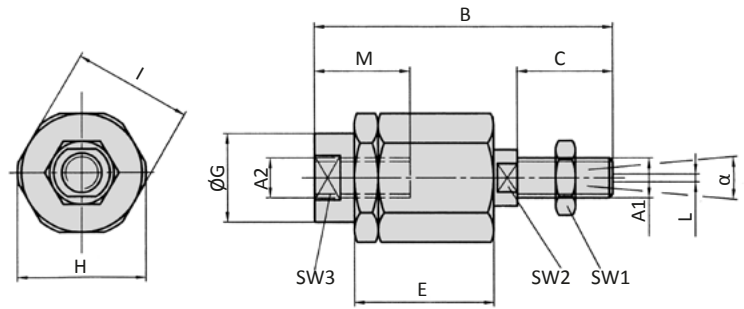
Clevis pin with snap rings (FD-125)



Model-no.:	for cylinder	A	B	C	D	E	F	G	Ø H
RD-25	XL-032	M10 x 1.25	20	40	26	10	52	20	10
FD-40	XL-040	M12 x 1.25	24	48	32	12	62	24	12
FD-63	XL-050, XL-063	M16 x 1.5	32	64	40	16	83	32	16
FD-80	XL-080, XL-100	M20 x 1.5	40	80	50	20	105	40	20
FD-125	XL-125	M27 x 2	54	110	65	30	148	55	30

material: steel, zinc plated

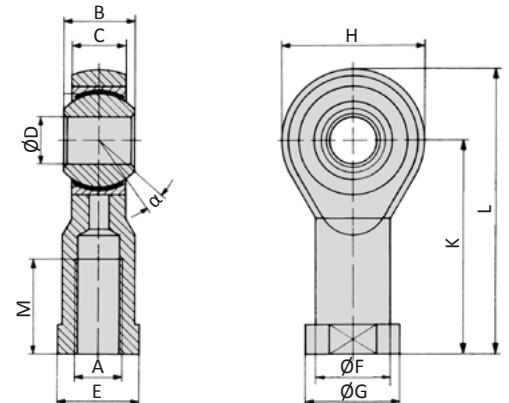
FK-xxx Flexible coupling



Model-no.:	for cylinder	A1, A2	B	C	D	E	ØG	H	I	L	M	SW1	SW2	SW3	α
FK-32	XL-032	M10 x 1.25	71.5	20	7.5	35	22	32	30	2	22	17	12	19	8°
FK-40	XL-040	M12 x 1.25	71.5	20	7.5	35	22	32	30	2	22	19	12	19	8°
FK-63	XL-050, XL-063	M16 x 1.5	104	32	10	53	32	45	41	2	30	24	20	27	6°
FK-80	XL-080, XL-100	M20 x 1.5	119	40	10	53	32	45	41	2	37	30	20	27	6°
FK-125	XL-125	M27 x 2	147	54	10	60	57	70	65	2	48	41	24	54	8°

material: steel, zinc plated

RO-xx, FO-xxx Rod eye

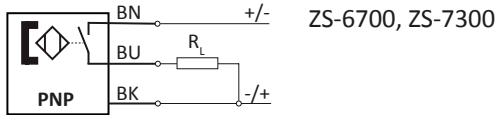
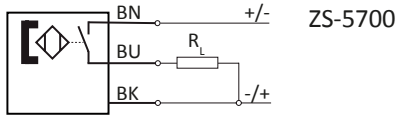
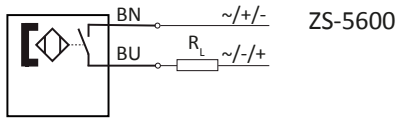


Model-no.:	for cylinder	A	B	C	ØD	E	ØF	ØG	H	K	L	M	α
RO-25	XL-032	M10 x 1.25	14	10.5	10	17	15	19	28	43	57	20	13°
FO-40	XL-040	M12 x 1.25	16	12	12	19	17.5	22	32	50	66	22	13°
FO-63	XL-050, XL-063	M16 x 1.5	21	15	16	22	22	27	42	64	85	28	15°
FO-80	XL-080, XL-100	M20 x 1.5	25	18	20	30	27.5	34	50	77	102	33	14°
FO-125	XL-125	M27 x 2	37	25	30	41	40	50	70	110	145	51	17°

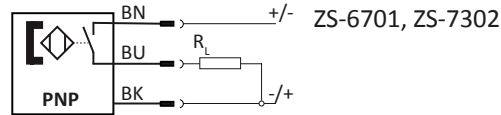
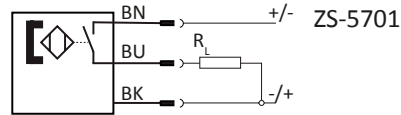
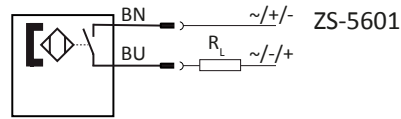
materials: steel, zinc plated, bearing steel, bronze bushing

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

The sensors are mounted at the groove of the cylinder profile. It is fixed by turning the fixing screw at the sensor clockwise. The cover stripe XLB-011 (see below) can be used for protecting the sensor cable.

Cover for sensor groove

Model-no.:	XLB-011
	
Design	plastic profile, 50 cm length, blue
For series	XL, NXD, NXE, NYD, NYE, NYSE, LX

Series KM-09 and KM-10



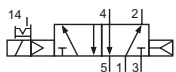
Technical details

Connection	KM-09: G1/8 KM-10: G1/4
Nominal size	KM-09: 6 mm, KM-10: 9 mm
Temperature range	-10°C ... +70°C
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	Body: Al (anodized), plastic, seals: NBR, inner parts: Al, stainless steel and brass
Protection	IP 65 according to EN 60529
	Valves in accordance with 2014/34/EU (ATEX) available. (Chapter 13)

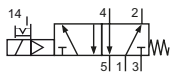


Electrically operated spool valve. The manual override is detent and is operated by screw driver.

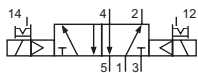
5/2-way-valves



KM-09-510-HN-xxx
KM-10-510-HN-xxx
5/2-way, single solenoid, air spring return

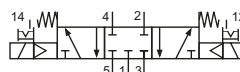


KM-09-511-HN-xxx
KM-10-511-HN-xxx
5/2-way, single solenoid, mechanical spring return

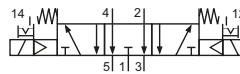


KM-09-520-HN-xxx
KM-10-520-HN-xxx
5/2-way, double solenoid

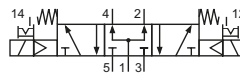
5/3-way-valves



KM-09-530-HN-xxx
KM-10-530-HN-xxx
5/3-way, center position closed



KM-09-533-HN-xxx
KM-10-533-HN-xxx
5/3-way, center position exhausted



KM-09-534-HN-xxx
KM-10-534-HN-xxx
5/3-way, center position pressurized

Please complete: xxx = electrical option

Electrical options

Nominal voltage	Power consumption	Specifics	Plug connection*1	-xxx Manual override on same side of ports	
				2 and 4	1, 3 and 5
12 V DC	4.2 W		Form B industrial norm	-411	-441
12 V DC	2.2 W	max. 8 bar	Form B industrial norm	-431	-461
24 V DC	4.2 W		Form B industrial norm	-412	-442
24 V DC	4.8 W		M 12	-O12	-O42
24 V DC	2.2 W	max. 8 bar	Form B industrial norm	-432	-462
24 V DC	2.5 W	max. 8 bar	M 12	-O32	-O62
24 V AC	7/4 VA		Form B industrial norm	-422	-452
115 V AC	7/4 VA		Form B industrial norm	-426	-456
230 V AC	7/4 VA		Form B industrial norm	-427	-457

*1 Plug socket not included, suitable plug sockets see Seite 17.

Series KM-09 and KM-10

Technical data

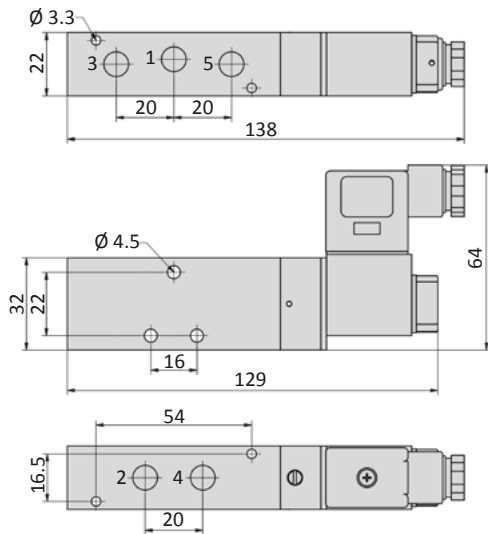
Model-no.:	KM-09-510	KM-09-511	KM-09-520	KM-09-530	KM-09-533	KM-09-534
Operating pressure* (bar)	3 ... 10	3 ... 10	3 ... 10	3 ... 10	3 ... 10	3 ... 10
Pilot pressure* (bar)	3 ... 10	3 ... 10	3 ... 10	3 ... 10	3 ... 10	3 ... 10
Flow rate (NI/min)	950	810	950	680	680	680
Response time (ms) at 6 bar	on: 15 off: 16	on: 13 off: 28	on: 15 off: 15	on: 14 off: 16	on: 14 off: 16	on: 14 off: 16
Weight (kg)	0.230	0.231	0.330	0.330	0.330	0.330
Model-no.:	KM-10-510	KM-10-511	KM-10-520	KM-10-530	KM-10-533	KM-10-534
Operating pressure* (bar)	2.5 ... 10	2.5 ... 10	2.5 ... 10	3 ... 10	3 ... 10	3 ... 10
Pilot pressure* (bar)	2.5 ... 10	2.5 ... 10	2.5 ... 10	3 ... 10	3 ... 10	3 ... 10
Flow rate (NI/min)	2100	1800	2100	1500	1500	1500
Response time (ms) at 6 bar	on: 18 off: 19	on: 16 off: 27	on: 18 off: 18	on: 16 off: 22	on: 16 off: 22	on: 16 off: 22
Weight (kg)	0.470	0.470	0.630	0.630	0.630	0.630

* max. 8 bar at 2.2 W and 2.5 W

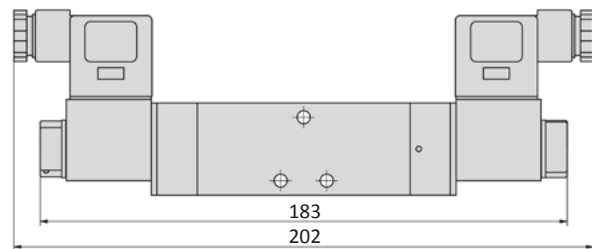
Series KM-09 and KM-10

Dimensions

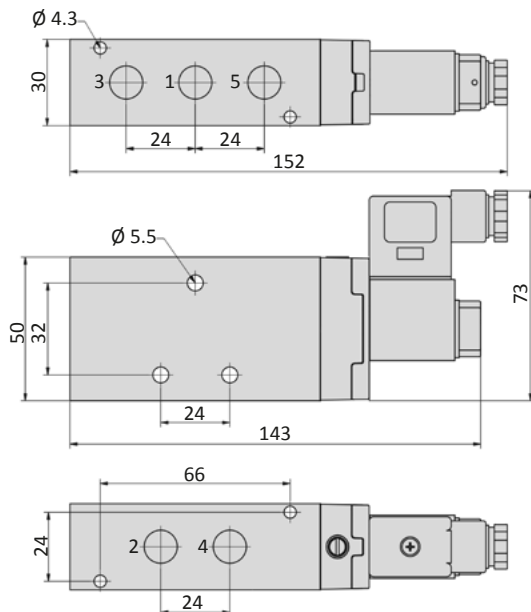
KM-09-51x-HN



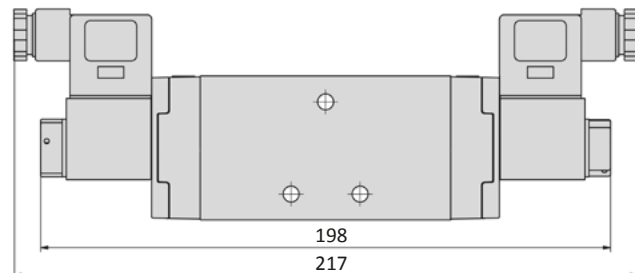
KM-09-520-HN, KM-09-53x-HN



KM-10-51x-HN



KM-10-520-HN, KM-10-53x-HN



- 1 = pressure inlet
- 2,4 = outlets
- 3,5 = exhausts

Plug socket (not included in scope of delivery) can be repositioned by 180°.
Solenoid coil can be repositioned by 4 x 90°.

Form B industrial norm

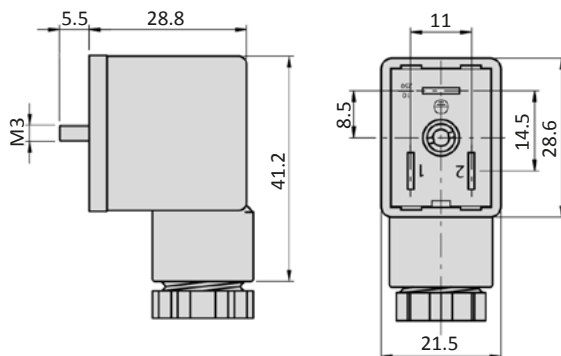
Overall width	22 mm
Contact distance	11 mm
Contacts	2P + E
Protection	IP 65 according to EN 60529 requires a flat gasket
For use with series	M-04, M-05, M-07, M-22, KM-09, KM-10, MS-18, KN-05, MN-06, MI-01, MI-02, MI-03



Model-no.:	28-ST-01	28-ST-04-112	28-ST-04-127	28-ST-06-112	28-ST-06-127	28-ST-06-K3-112	28-ST-06-K3-127
Voltage (AC/DC)	0 - 250 V	10 - 50 V	70 - 250 V	24 V	230 V	24 V	230 V
Status indicator	no	yes	yes	yes	yes	yes	yes
Protective circuit	no	no	no	yes (Varistor)	yes (Varistor)	yes (Varistor)	yes (Varistor)
Connecting cable	without	without	without	without	without	3 m	3 m
Wire cross section	max. 1.5 mm ²	max. 1.5 mm ²	max. 1.5 mm ²	max. 1.5 mm ²	max. 1.5 mm ²	3 x 0.75 mm ²	3 x 0.75 mm ²
Ø Connecting cable	6 - 8 mm	6 - 8 mm	6 - 8 mm	6 - 8 mm	6 - 8 mm		

Dimensions

Form B industrial norm



Solenoid coils

Form B industrial norm

Overall width	22 mm
Contact distance	11 mm
Contacts	2P + E
Protection	IP 65 according to EN 60529 with connected plug socket
Duty cycle	100 %
Temperature range*	-20°C ... +50°C
Voltage tolerance	± 10 %
For use with series	M-04, M-05, M-07, M-22, KM-09, KM-10, MS-18, KN-05, MN-06, MI-01, MI-02, MI-03



* The max. applicable operating temperature, depends on the temperature specification of the used valve.

Model-no.:	23-SP-011-411	23-SP-011-412	23-SP-011-422	23-SP-011-426	23-SP-011-427	23-SP-012-431	43-SP-012-432
Voltage	12 V DC	24 V DC	24 V AC	115 V AC	230 V AC	12 V DC	24 V DC
Power consumption DC	4.2 W	4.2 W	-	-	-	2.2 W	2.2 W
Power consumption AC	-	-	4 VA	4 VA	4 VA	-	-

Model-no.:	23-SP-011-1-711	23-SP-011-1-712	23-SP-011-1-725	23-SP-011-1-727	23-SP-011-1-732
Voltage	12 V DC/ 24V AC	24 V DC/ 48 V AC	110/115 V AC	230 V AC	24 V DC
Power consumption DC	4.6 W	4.8 W	-	-	2.5 W
Power consumption AC	7.1 VA	7.7 VA	6.0 VA/ 7.6 VA	7.9 VA	-
Specifics	Enhanced humidity resistance.				

M12 connection

Overall width	22 mm
Contact distance	-
Contacts	2P
Protection	IP 65 according to EN 60529 with connected plug socket
Duty cycle	100 %
Temperature range*	-20°C ... +50°C
Voltage tolerance	± 10 %
For use with series	

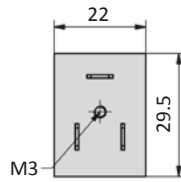
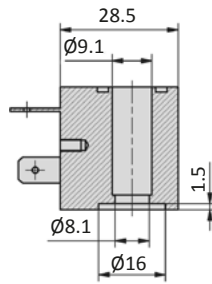


* The max. applicable operating temperature, depends on the temperature specification of the used valve.

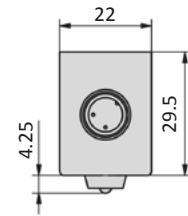
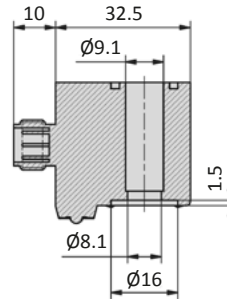
Model-no.:	23-SP-011-5-012	23-SP-012-5-032
Voltage	24 V DC	24 V DC
Power consumption DC	4.8 W	2.5 W
Power consumption AC	-	-
Specifics	Mounting on manifold not allowed. With integrated LED and protective circuit.	Min. mounting distance for manifold mounting is 20 mm. With integrated LED and protective circuit.

Dimensions

Form B industrial norm



M12 connection



Valves KM-09 and KM-10

- HN * - * * *				
Manual override	Coil and plug options	Coil type	Manual override position on side of	Voltage
HN detent	0 ATEX 2GD, encapsulated with casting compound width 30 mm	23-SP-037	0 without indication ports 1/3/(5)	0 without indication
HNR detent	1 with coil and plug	according to valve	1 DC ports 1/3/(5)	1 12 V
HNT non-detent	2		2 AC ports 1/3/(5)	2 24 V
	3		3 AC ports 1/3/(5)	3 42 V
	4 with coil, without plug	according to valve	4 DC, low power consumption ports 1/3/(5)	4 48 V
	5 without coil	no	5 DC ports 2/(4)	5 110 V
	6 without pilot valve	no	6 DC ports 2/(4)	6 115 V
	7 with coil, with enhanced humidity resistance, without plug	according to valve	7 AC ports 2/(4)	7 230 V
	8 with coil, with enhanced humidity resistance, with plug	according to valve	8 DC, low power consumption ports 2/(4)	8 240 V
	9 ATEX 2GD, intrinsically safe, with plug width 30 mm	23-SP-038	9 without indication ports 2/(4)	9
	A ATEX 3GD, without plug, width 30 mm	23-SP-040		A 4 V
	B ATEX 3GD, with plug, width 30 mm	23-SP-040		B 6 V
	C ATEX 3GD, without plug, width 22 mm	23-SP-041		C 8 V
	D			D 61 V
	E ATEX 2GD, encapsulated with casting compound width 22 mm	23-SP-036		E 36 V
	F with coil, with enhanced humidity resistance, without plug, low temperature version	23-SP-060-1		F 9 V
	G			
	H with coil shape B according to DIN EN 175301-803, with plug	23-SP-011-G		
	I with coil shape B according to DIN EN 175301-803, without plug	23-SP-011-G		
	J with coil shape A according to DIN EN 175301-803, without plug (if not standard)	23-SP-016		
	K with coil shape A according to DIN EN 175301-803, with plug (if not standard)	23-SP-016		
	L with coil, with plug with LED and protective circuit	according to valve		
	M with coil, with plug with LED, without protective circuit	according to valve		
	N with coil with M12 connection	according to valve		
	O with coil with M12 connection with LED and protective circuit	according to valve		
	P without connector bridge, without plug			
	Q with coil with with cable	according to valve		
	R with cable up to 1 m length	according to valve		
	S with connector bridge, without plug			
	T			
	U ATEX 2GD, without coil (for coil 23-SP-036)	no		
	V ATEX 2GD, Flame proof enclosure and encapsulated with casting compound	23-SP-045		
	W ATEX 2GD / 3GD, without coil (for coil 23-SP-041 and 23-SP-045)	no		
	X ATEX 3GD, without coil (for coil 23-SP-040 in 230V AC and 115V AC)	no		
	Y ATEX 2GD, without coil (for coil 23-SP-038)	no		
	Z ATEX 2GD / 3GD, without coil (for coil 23-SP-040 in 24V DC and 23-SP-037)	no		

Not all options are suitable for all valve series