STAINLESS STEEL CYLINDERS
SERIES 97

Single- and double-acting, cushioned, magnetic.
Ø 32, 40, 50, 63 mm

- Clean design
- Stainless steel AISI 304
- Adjustable endstroke cushioning

Series 97 stainless steel cylinders can be used in critical applications where a high level of corrosion resistance is required (for example: off-shore, naval, food industries).

These cylinders are normally equipped with end-stroke cushioning which can be adjusted through a screw on the end block.
In order to quieten the impact of the piston on the end block, these cylinders are also equipped with mechanical cushioning.

General Data

Type of construction	The end blocks are screwed to the tube with an intermediate Teflon ring
Operation	Single-acting and double-acting
Materials	End blocks, tube, rod in stainless steel AISI 304 Rod seals in PU, piston seals in NBR Plastic guiding element, NSF H1-certified lubricant
Type of mounting	Threaded front and rear locking ring Pins on front cap ends Rear male hinge Articulated rear male hinge Rear female hinge
Stroke min-max	25 ÷ 800 mm
Operating temperature	0°C ÷ 80°C (with dry air - 20°C)
Operating pressure	1 ÷ 10 bar
Speed	10 ÷ 1000 mm/sec (without load)
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted.

STAINLESS STEEL CYLINDERS
SERIES 97 - STROKES

Standard strokes

● = single-acting
✖ = double-acting

Ø	25	50	75	80	100	125	150	160	200	250	300	320	400	500
32	✖ ●	✖ ●	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
40	✖ ●	✖ ●	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
50	✖ ●	✖ ●	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
63	✖ ●	✖ ●	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖

Coding Examples

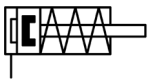
97	M	2	A	050	A	0200

97	SERIES	
M	VERSIONS M = rear male hinge S = articulated rear male hinge F = rear female hinge T = front and rear threaded end blocks A = front end block with pin	
2	OPERATION 1 = single-acting, front spring 2 = double-acting, front and rear cushions 6 = double-acting, through-rod, front and rear cushions (T and A versions only)	PNEUMATIC SYMBOLS CS06 CD09 CD13
A	MATERIALS A = stainless steel AISI 304 - PU seals V = stainless steel AISI 304 - FKM seals (150°C)	
050	BORE 032 = 32 mm 040 = 40 mm 050 = 50 mm 063 = 63 mm	
A	TYPE OF DESIGN A = standard (locking ring for end cap V + lock nut for rod U)	
0200	STROKE (see the table)	
	= standard V = rod seal in FKM	

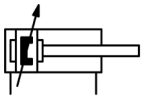
Pneumatic symbols

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.

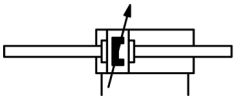
CS06



CD09



CD13



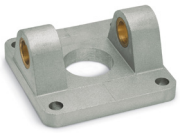
Accessories

Foot mount Mod. B INOX

Male tr. bracket with swivel ball joint Mod. R

Trunnion bracket Mod. I INOX

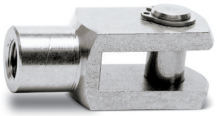
Rear female trunnion bracket Mod. C-H



Tight rear female tr. bracket Mod. CR

90° male tr. bracket + sw. ball joint Mod. ZCR

Rod fork end Mod. G INOX



Piston rod lock nut Mod. U-94/90

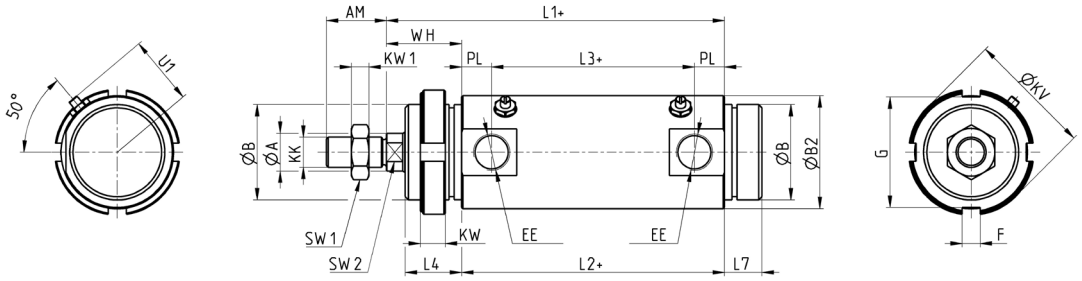
Nose nut Mod. V-97

Anti-rotation clevis pin Mod. SR-90

Clevis pin Mod. S-90

STAINLESS STEEL CYLINDERS
SERIES 97 - DIMENSIONS

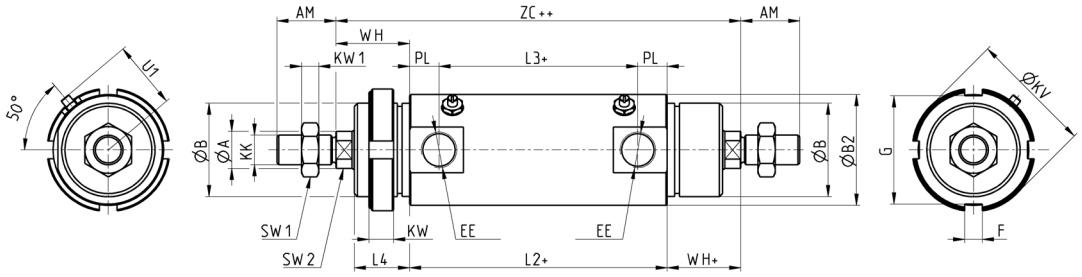
Cylinders Series 97, Mod. T



+ = add the stroke

Ø	øA	AM	øB	øB2	EE	F	G	KK	PL	SW1	KW1	SW2	U1	WH	L1 +	L2+	L3 +	L4	L7	KW	øKV
32	12	22	M30x1,5	36	G1/8	5	38	M10x1,25	9	17	6	10	23	26	120	94	76	19,5	15	7	42
40	16	24	M38x1,5	45	G1/4	6	50	M12x1,25	12	19	7	13	27	30	135	105	81	22,5	15	8	55
50	20	32	M45x1,5	55	G1/4	6	53	M16x1,5	12	24	8	17	33	37	143	106	82	28	18	10	60
63	20	32	M45x1,5	68	G3/8	6	53	M16x1,5	13	24	8	17	40	37	158	121	95	28	18	10	60

Cylinders Series 97, Mod. T - through-rod

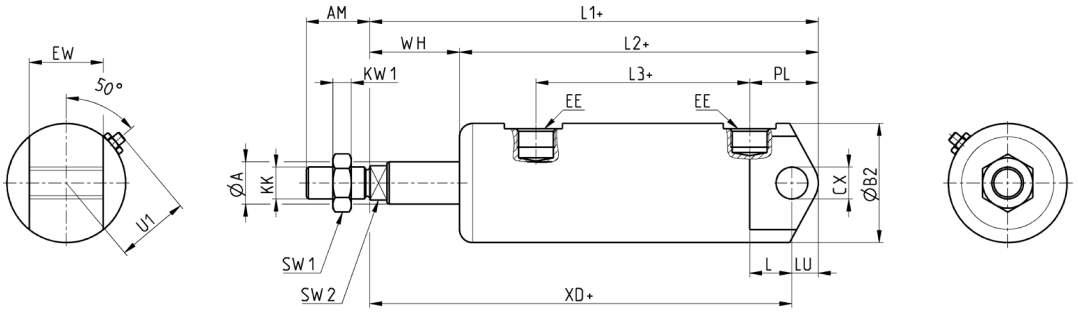


+ = add the stroke once
++ = add the stroke twice

Ø	øA	AM	øB	øB2	EE	F	G	KK	PL	SW1	KW1	SW2	U1	WH	L2+	L3 +	L4	KW	øKV	ZC++
32	12	22	M30x1,5	36	G1/8	5	38	M10x1,25	9	17	6	10	23	26	94	76	19,5	7	42	146
40	16	24	M38x1,5	45	G1/4	6	50	M12x1,25	12	19	7	13	27	30	105	81	22,5	8	55	165
50	20	32	M45x1,5	55	G1/4	6	53	M16x1,5	12	24	8	17	33	37	106	82	28	10	60	180
63	20	32	M45x1,5	68	G3/8	6	53	M16x1,5	13	24	8	17	40	37	121	95	28	10	60	195

Cylinders Series 97, Mod. M

With rear male trunnion bracket

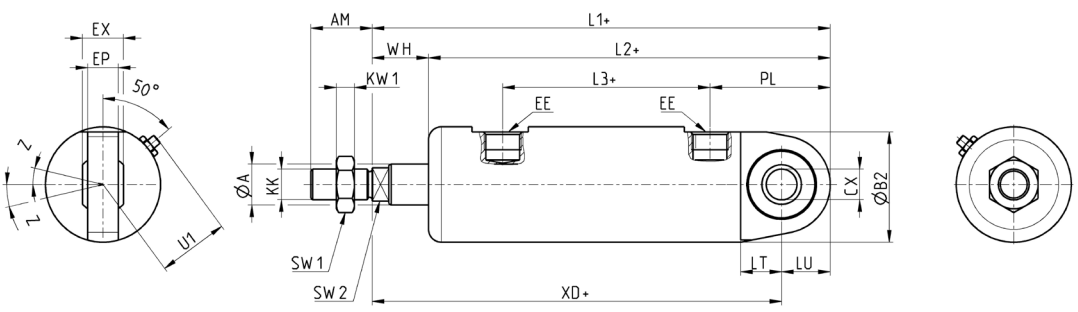


+ = add the stroke

Ø	øA	AM	øB2	CX	EE	EW	KK	PL	SW1	KW1	SW2	U1	WH	L1 +	L2+	L3 +	L	LU	XD+
32	12	22	36	10	G1/8	26	M10x1,25	23	17	6	10	23	26	151	125	76	13	9	142
40	16	24	45	12	G1/4	28	M12x1,25	26	19	7	13	27	34	170	136	81	16	10	160
50	20	32	55	12	G1/4	32	M16x1,5	32	24	8	17	33	37	182	145	82	16,5	12	170
63	20	32	68	16	G3/8	40	M16x1,5	29,5	24	8	17	40	50	202	152	95	21	12	190

Cylinders Series 97, Mod. S

With articulated rear male trunnion bracket

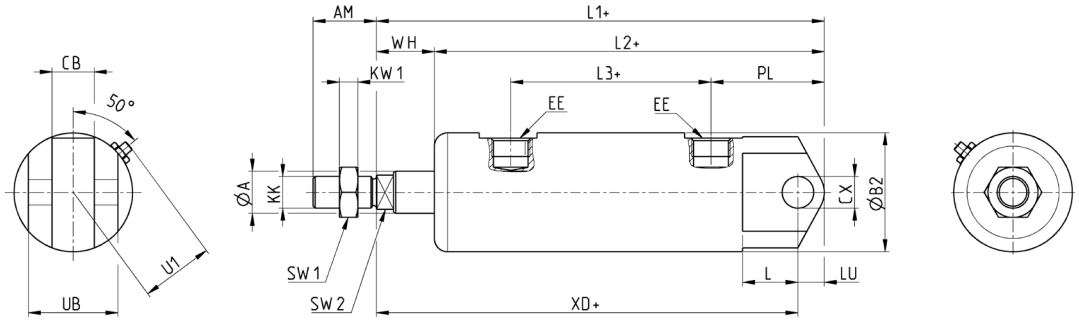


+ = add the stroke

Ø	øA	AM	øB2	CX	EE	EP	EX	KK	PL	SW1	KW1	SW2	U1	WH	L1 +	L2+	L3 +	LT	LU	XD+	Z
32	12	22	36	10	G1/8	10,5	14	M10x1,25	37	17	6	10	23	18	157	139	76	13	15	142	13
40	16	24	45	12	G1/4	12	16	M12x1,25	47	19	7	13	27	22	179	157	81	16	19	160	13
50	20	32	55	16	G1/4	15	21	M16x1,5	49	24	8	17	33	28,5	190,5	162	82	16,5	20,5	170	15
63	20	32	68	16	G3/8	15	21	M16x1,5	60	24	8	17	40	31,5	214	182,5	95	21	24	190	15

STAINLESS STEEL CYLINDERS
SERIES 97 - DIMENSIONS

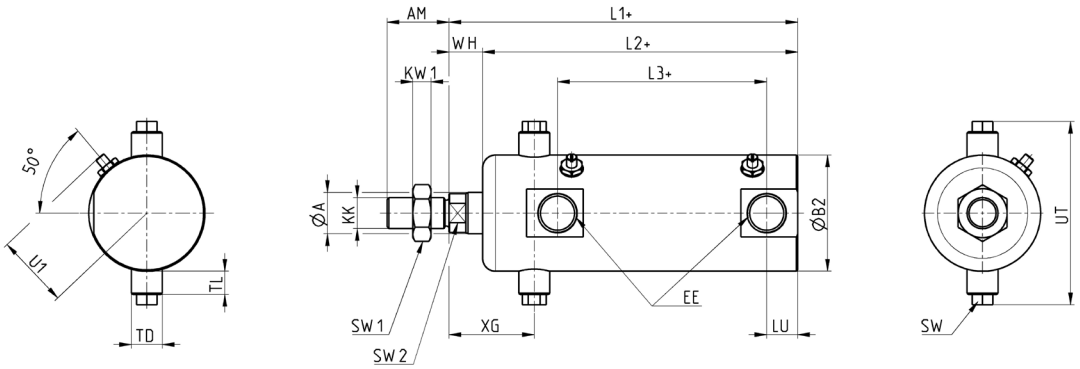
Cylinders Series 97, Mod. F



+ = add the stroke

Ø	øA	AM	øB2	CB	CX	EE	KK	PL	SW1	KW1	SW2	U1	WH	L1 +	L2+	L3 +	L	LU	XD+	UB
32	12	22	36	14	10	G1/8	M10x1,25	31	17	6	10	23	18	151	133	76	13	9	142	34
40	16	24	45	16	12	G1/4	M12x1,25	38	19	7	13	27	22	170	148	81	16	10	160	40
50	20	32	55	21	16	G1/4	M16x,1,5	45,5	24	8	17	33	28,5	182	153,5	82	21	12	170	45
63	20	32	68	21	16	G3/8	M16x1,5	48	24	8	17	40	31,5	202	170,5	95	21	12	190	51

Cylinders Series 97, Mod. A



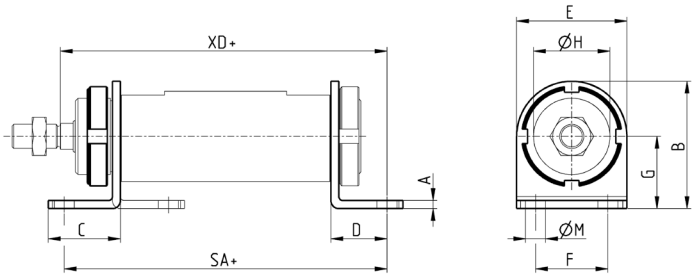
+ = add the stroke

Ø	øA	AM	øB2	EE	KK	SW	SW1	KW1	SW2	U1	WH	L1 +	L2+	L3 +	LU	XG	TD	TL	UT
32	12	22	36	G1/8	M10x1,25	8	17	6	10	23	9	120	111	76	9	27	10	7	58
40	16	24	45	G1/4	M12x1,25	8	19	7	13	27	13	135	122	81	12	33	12	9	71
50	20	32	55	G1/4	M16x1,5	8	24	8	17	33	18	143	125	82	12	40	14	9	81
63	20	32	68	G3/8	M16x1,5	12	24	8	17	40	22,5	158	135,5	95	13	45	16	12	104

Foot mount Mod. B INOX

Material: Stainless Steel 304

Supplied with:
1x nut
2x single feet



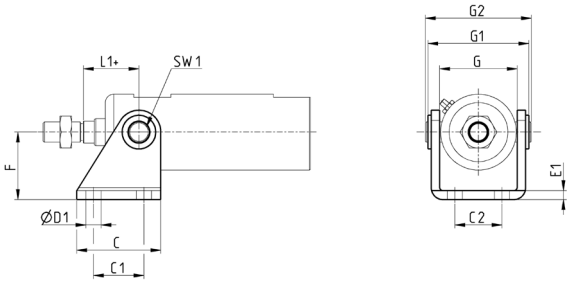
+ = add the stroke

Mod.	Ø	A	B	C	D	E	SA+	F	G	øH	øM	XD+
B-97-32	32	4	53	35	24	42	142	32	32	30	7	142
B-97-40	40	4	63,5	36	28	55	161	36	36	38	10	160
B-97-50	50	5	77,5	47	32	65	170	45	45	45	10	170
B-97-63	63	5	82,5	45	32	65	185	50	50	45	10	190

Trunnion bracket Mod. I INOX

Material: Stainless Steel 304

Supplied with:
1x female trunnion
2x cartridges



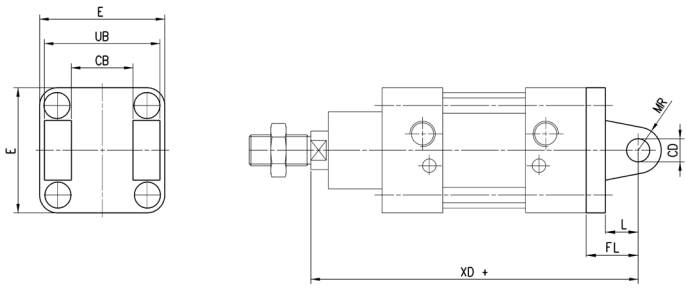
+ = add the stroke

Mod.	Ø	C	C1	C2	øD1	E1	F	G	G1	G2	L1 +	SW1
I-97-32	32	40	24	20	7	4	35	38	50	58	27	8
I-97-40	40	50	30	28	9	5	40	46	60	71	33	8
I-97-50	50	54	34	36	9	6	45	57	74	81	40	8
I-97-63	63	65	35	43	9	6	50	70	88	104	45	12

Front or rear female trunnion Mod. C-H

Material: Stainless Steel 316

Supplied:
1x female trunnion
4x screws



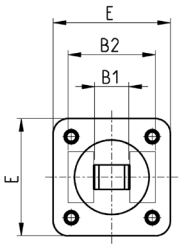
+ = add the stroke

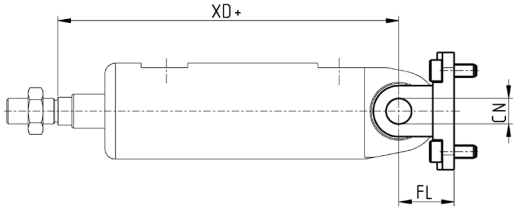
Mod.	Ø	CB	CD	E	FL	L	MR	UB	XD+
C-H-90-32	32	26	10	45	22	12	10	45	142
C-H-90-40	40	28	12	55	25	15	12	52	161
C-H-90-50	50	32	12	65	27	17	12	60	170
C-H-90-63	63	40	16	75	32	20	16	70	185

Tight rear female trunnion bracket

Material: Stainless Steel 316

Supplied with:
1x female trunnion bracket
4x screws





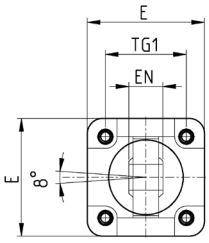
+ = add the stroke

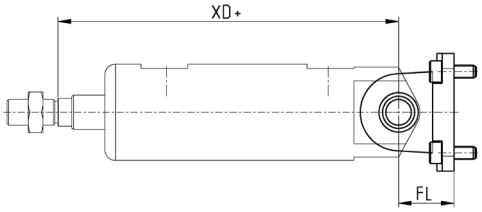
Mod.	Ø	B1	B2	E	CN	FL	XD+
CR-90-32	32	14	34	45	10	22	142
CR-90-40	40	16	40	55	12	25	160
CR-90-50	50	21	45	65	16	27	170
CR-90-63	63	21	51	75	16	32	190

Male trunnion bracket with swivel ball joint Mod. R

Material: Stainless Steel 316

Supplied with:
1x male trunnion bracket
4x screws





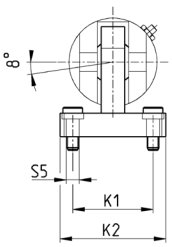
+ = add the stroke

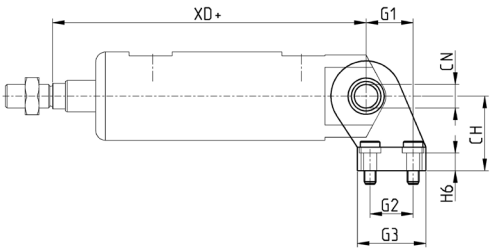
Mod.	Ø	E	EN	FL	TG1	XD+
R-90-32	32	45	14	22	32,5	142
R-90-40	40	55	16	25	38	160
R-90-50	50	65	21	27	46,5	170
R-90-63	63	75	21	32	56,5	190

90° male trunnion bracket with swivel ball joint Mod. ZCR

Material: Stainless Steel 316

Supplied with:
1x male trunnion bracket
4x screws

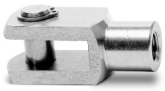


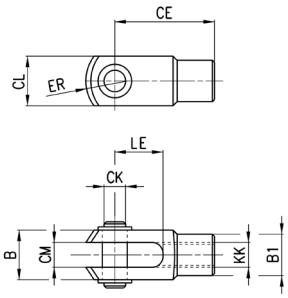


+ = add the stroke

Mod.	Ø	CH	CN	G1	G2	G3	H6	K1	K2	S5	XD+
ZCR-90-32	32	32	10	21	18	31	10	38	51	6,6	142
ZCR-90-40	40	36	12	24	22	35	10	41	54	6,6	160
ZCR-90-50	50	45	16	33	30	45	12	50	65	9	170
ZCR-90-63	63	50	16	37	35	50	12	52	67	14	190

Rod fork end INOX Mod. G



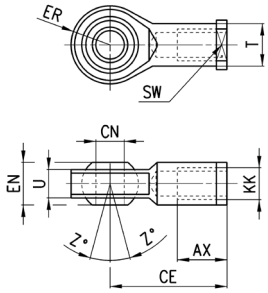


ISO 8140

Material:
stainless steel 303

Mod.	Ø	CK	LE	CM	CL	ER	CE	KK	B	B1
G-90-25-32	32	10	20	10	20	12	40	M10x1,25	26	18
G-90-40	40	12	24	12	24	14	48	M12x1,25	31	20
G-90-50-63	50-63	16	32	16	32	19	64	M16x1,5	39	26

Swivel ball joint Mod. GA INOX

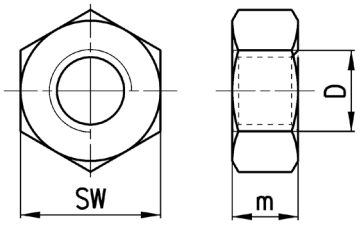


ISO 8139

Materials:
- stainless steel 304 bracket
- stainless steel 420
spherical ring
- sintered bronze bushing

Mod.	Ø	CN	U	EN	ER	AX	CE	KK	T	Z	SW
GA-90-32	32	10	10,5	14	14	20	43	M10x1,25	15	6,5	17
GA-90-40	40	12	12	16	16	22	50	M12x1,25	17,5	6,5	19
GA-90-50-63	50-63	16	15	21	21	28	64	M16x1,5	22	7,5	22

Piston rod nut Mod. U INOX



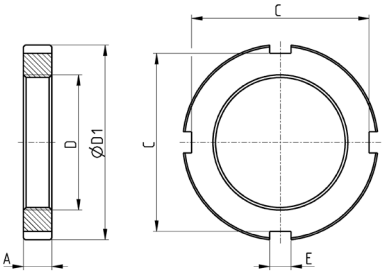
ISO 4035
Material: Stainless Steel 304

Mod.	Ø	D	M	SW
U-90-25-32	32	M10x1,25	6	17
U-90-40	40	M12x1,25	7	19
U-90-50-63	50-63	M16x1,5	8	24

STAINLESS STEEL CYLINDERS
SERIES 97 - ACCESSORIES

Nose nut Mod. V INOX

Material: Stainless Steel 304

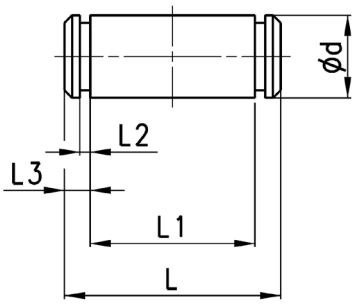


Mod.	Ø	A	D	øD1	E	C
V-97-32	32	7	M30x1.5	42	5	38
V-97-40	40	8	M38x1.5	55	6	50
V-97-50-63	50-63	10	M45x1.5	60	6	53

Clevis pin Mod. S INOX

Material: Stainless Steel 303

Supplied with:
1x clevis pin
2x seeger (steel)

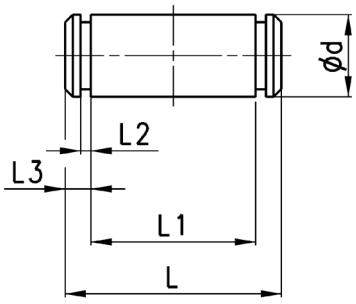


Mod.	Ø	øD	L	L1	L2	L3
S-90-32	32	10	53	46	1,1	3
S-90-40	40	12	60	53	1,1	3
S-90-50	50	12	68	61	1,1	3
S-90-63	63	16	78	71	1,1	3

Clevis pin Mod. S

Materials:
Stainless steel Clevis pin, Steel Seeger

Supplied with:
1x clevis pin
2x seeger in steel

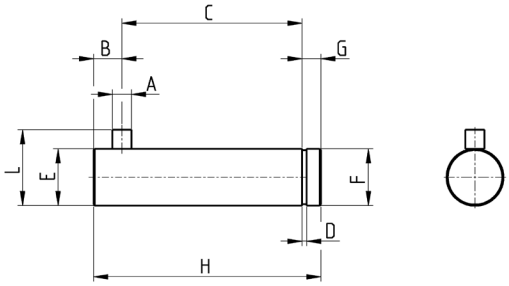


Mod.	Ø	Ød	L	L1	L2	L3
S-32	32	10	53	46	1.1	3
S-40	40	12	60	53	1.1	3
S-50	50	12	68	61	1.1	3
S-63	63	16	78	71	1.1	3

Antirotating clevis pin Mod. SR INOX

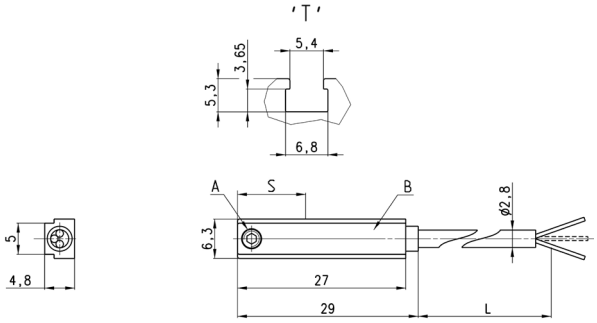
Material: Stainless Steel 316

Supplied with:
1x antirotating clevis pin
1x seeger (steel)



Mod.	Ø	A	B	C	D	E	F	G	H	L
SR-90-32	32	3	4,5	32,5	1,1	10	9,6	4	41	14
SR-90-40	40	4	6	38	1,1	12	11,5	4	48	16
SR-90-50	50	4	6	43	1,1	16	15,2	5	54	20
SR-90-63	63	4	6	49	1,1	16	15,2	5	60	20

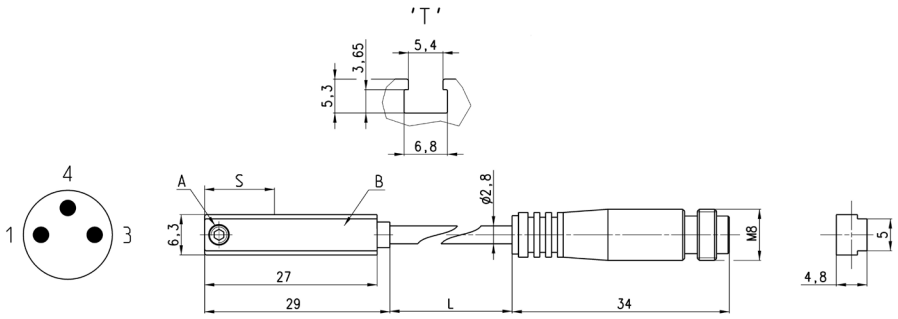
Magnetic proximity switches with 2- or 3-wire cable for T-slot



Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CST-220*	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8W	None	2 m	14,5 mm	Yellow
CST-220-5*	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	5 m	14,5 mm	Yellow
CST-220EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8W	None	2 m	14,5 mm	Yellow
CST-220-5EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8W	None	5 m	14,5 mm	Yellow
CST-220-12EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8W	None	12 m	14,5 mm	Yellow
CST-232	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-232-5	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-232EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-232-5EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8W	Against polarity reversing and overvoltage	5 m	14,5 mm	Yellow
CST-332	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	7,5 mm	Yellow
CST-332-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	7,5 mm	Yellow
CST-332EX	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	7,5 mm	Yellow
CST-332-5EX	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	7,5 mm	Yellow
CST-432	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-432-5	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-432EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-432-5EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-532	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	8,5 mm	Yellow
CST-532-5	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	8,5 mm	Yellow
CST-532EX	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	8,5 mm	Yellow
CST-532-5EX	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	8,5 mm	Yellow

*Mod. CST-220, CST-220-5:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Magnetic proximity switches with M8 3-pin connector for T-slot



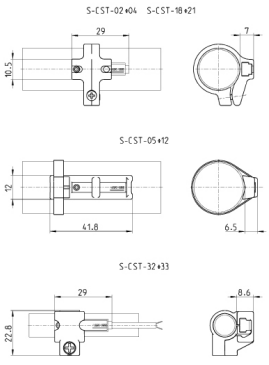
A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CST-250N*	Reed	2 wires M8 male 3 pin	10 ÷ 110 V AC/DC	-	250 mA	10 VA / 8 W	None	0,3 m	14,5 mm	Yellow
CST-250NEX	Reed	2 wires M8 male 3 pin	10 ÷ 110 V AC/DC	-	250 mA	10 VA / 8 W	None	0,3 m	14,5 mm	Yellow
CST-262	Reed	3 wires M8 male 3 pin	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	0,3 m	14,5 mm	Yellow
CST-262EX	Reed	3 wires M8 male 3 pin	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	0,3 m	14,5 mm	Yellow
CST-362	Magnetoresistive	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Yellow
CST-362EX	Magnetoresistive	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Yellow
CST-562	Hall effect	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	8,5 mm	Yellow
CST-562EX	Hall effect	3 wiresM8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	8,5 mm	Yellow

*Mod. CST-250N:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Adapters for Series CST-CSG sensors

Materials:
technopolymer (S-CST-02÷04)



Mod.	Ø
S-CST-06	32
S-CST-07	40
S-CST-08	50
S-CST-09	63