

Piston Rod Cylinders Bellows Cylinders

Advanced cylinder concepts with outstanding performance define the ORIGA piston rod cylinder programme.

The resulting advantages are the basis for trouble-free operation – whether as individual components or in a combined system, meeting the demands of modern automation for high reliability and high economic efficiency. Special solutions can be developed for optimum efficiency in specific applications.



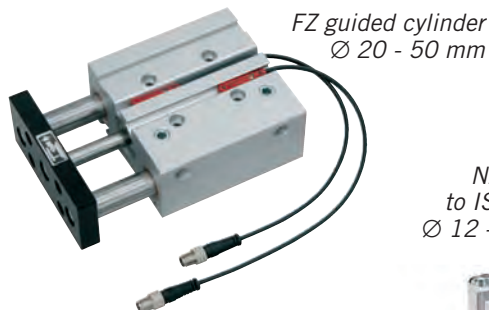
Consistent design of accessories for all cylinder series, e.g. swivel mountings, pivots, piston rod eyes, magnetic switches, etc.

DZ tie rod cylinder
to ISO 15552 (ISO 6431)
Ø 125 - 320 mm

DZB blocking cylinder
mountings to ISO 15552
(ISO 6431)
Ø 32 - 125 mm



ST stop cylinder



FZ guided cylinder
Ø 20 - 50 mm

NZ cylinder
to ISO 21287
Ø 12 - 100 mm

SZ short stroke cylinder
Ø 12 - 100 mm



AZV non-rotating cylinder
mountings to
ISO 15552 (ISO 6431)
Ø 32 - 100 mm

AZ cylinder
to ISO 15552 (ISO 6431)
VDMA 24562
Ø 32 - 100 mm

R round cylinder
to ISO 6432 Ø 10 - 25 mm
R round cylinder Ø 32 - 63 mm

SP bellows cylinder
single, double, triple convolution

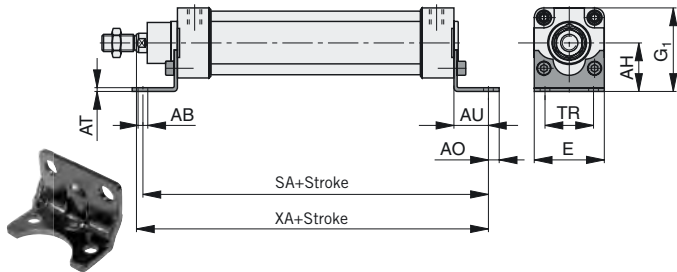
Mountings

Ø 32-100 mm

to ISO 15552 (ISO 6431), VDMA 24562 and CETOP RP43P

Mountings – Basic Cylinder, Series AZ....., AZD....., AZZ....., Ø 32 – 100 mm

Dimensions for Mounting A



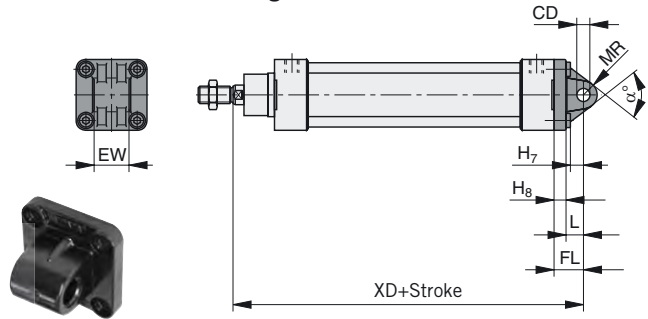
Material: steel passivated

Dimension Table (mm) – for Mounting A

Cyl. Ø	E	G ₁	AB	AH	AO	AT	AU	SA + Stroke	TR	XA + Stroke
32	47	55.5	7	32	8	4	24	142	32	144
40	53	62.5	9	36	10	4	28	161	36	163
50	65	77.5	9	45	10	5	32	170	45	175
63	75	87.5	9	50	10	5	32	185	50	190
80	95	110.5	12	63	14	6	41	210	63	215
100	115	128.5	14	71	15	6	41	220	75	230

Included in delivery: 2 foot brackets, 4 screws

Dimensions for Mounting BA



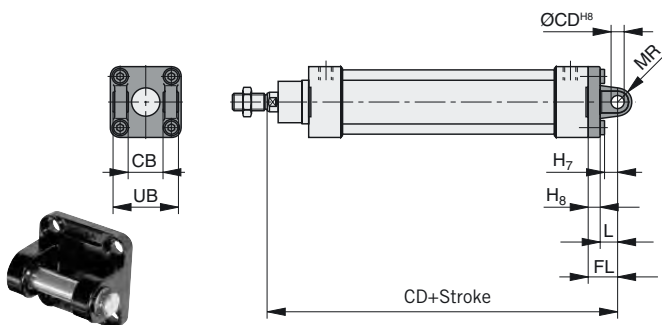
Material: cast aluminium

Dimension Table (mm) – for Mounting BA

Cyl. Ø	H ₇	H ₈	L	ØCD ^{H8}	EW	FL	MR + Stroke	XD	α°
32	10	10	12	10	26	22	10.5	142	60
40	13	10	15	12	28	25	13	160	60
50	12	11	16	12	32	27	13	170	70
63	17	11	21	16	40	32	17	190	60
80	16	15	21	16	50	36	17	210	70
100	20.5	16	25	20	60	41	21	230	70

Included in delivery: 1 rear trunnion mounting, 4 screws

Dimensions for Mounting B



Material: cast aluminium

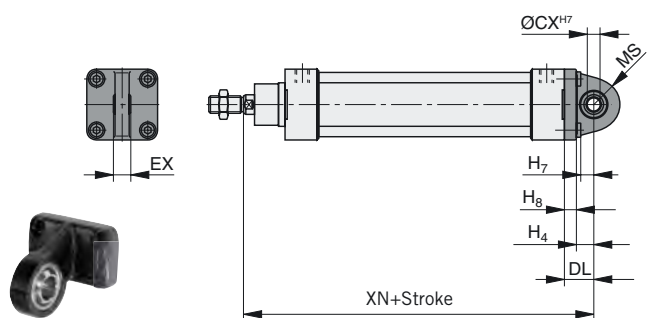
Dimension Table (mm) – for Mounting B

Cyl. Ø	H ₇	H ₈	L	ØCD ^{H8}	CB	FL	MR	UB	XD + Stroke
32	10	10	12	10	26	22	9	45	142
40	13	10	15	12	28	25	11	52	160
50	12	11	16	12	32	27	12	60	170
63	17	11	21	16	40	32	15	70	190
80	16	15	22	16	50	36	16	90	210
100	20.5	16	25	20	60	41	20	110	230

Included in delivery: 1 rear trunnion mounting, 4 screws

Dimensions for Mounting BAS

(rear trunnion mounting with spherical bearing)

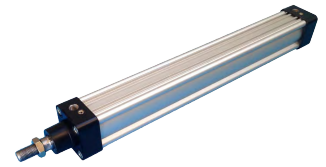


Material: cast aluminium

Dimension Table (mm) – for Mounting BAS

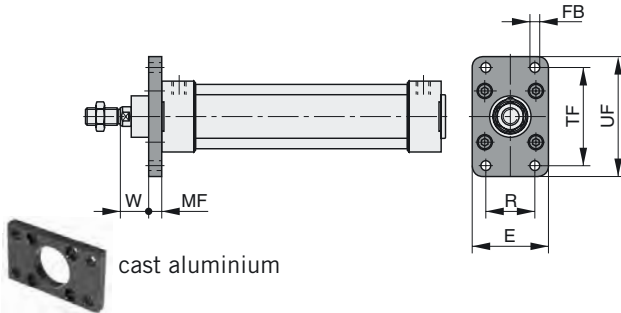
Cyl. Ø	H ₄	H ₆	H ₇	ØCX ^{H7}	DL	EX	MS	XN + Stroke
32	12	22	10	10	10	14	18	142
40	15	25	13	12	10	16	21	160
50	16	27	12	12	11	16	23	170
63	21	32	17	16	11	21	27	190
80	21	36	16	26	15	21	29	210
100	25	41	20.5	20	16	25	34	230

Included in delivery: 1 rear trunnion mounting with spherical bearing, 4 screws

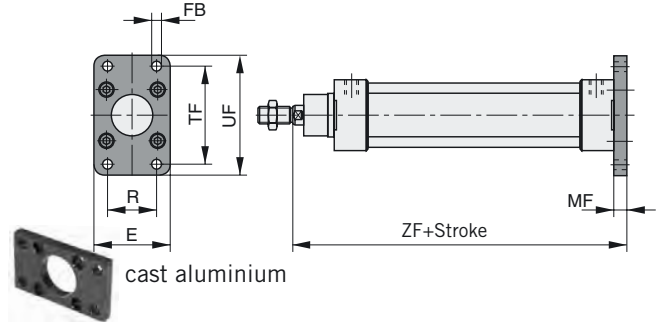


Mounting – Basic Cylinder, Series AZ....., AZD....., AZZ....., Ø 32 – 100 mm

Dimensions for Mounting C



Dimensions for Mounting D



Dimension Table (mm) – for Mounting C

Cyl. Ø	E	R	ØFB	MF	TF	UF	W
32	50	32	7	10	64	79	16
40	56	36	9	10	72	90	20
50	70	45	9	12	90	110	25
63	77	50	9	12	100	120	25
80	100	63	12	16	126	153	30
100	120	75	14	16	150	178	35

Included in delivery: 1 flange, 4 screws

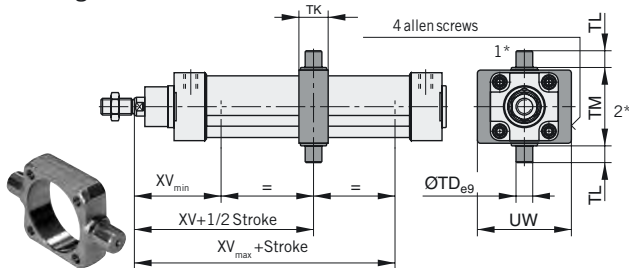
Dimension Table (mm) – for Mounting D

Cyl. Ø	E	R	ØFB	MF	TF	UF	ZF +Stroke
32	50	32	7	10	64	79	130
40	56	36	9	10	72	90	145
50	70	45	9	12	90	110	155
63	77	50	9	12	100	120	170
80	100	63	12	16	126	153	190
100	120	75	14	16	150	178	205

Included in delivery: 1 flange, 4 screws

Dimensions for Mounting EN, ISO 15552 (ISO 6431) only for series AZ (profile cylinder barrel version)

Flange dimensions to ISO 15552 (ISO 6431)



Material: aluminium, anodized

- 1* Mounting lugs in same direction as air connection (industrial standard version)
- 2* Mounting lugs offset 90° from air connection

Dimension Table (mm) – for Mounting EN

Cyl. Ø	ØTD _{eg}	TK	TL	TM	UW	XV _{min}	XV+ 1/2 Stroke	XV _{max} +Stroke
32	12	25	12	50	65	67	73	79
40	16	28	16	63	75	72	83	94
50	16	28	16	75	85	81	90	99
63	20	36	20	90	100	85	98	111
80	20	36	20	110	120	99	110	121
100	25	48	25	132	135	107	120	133

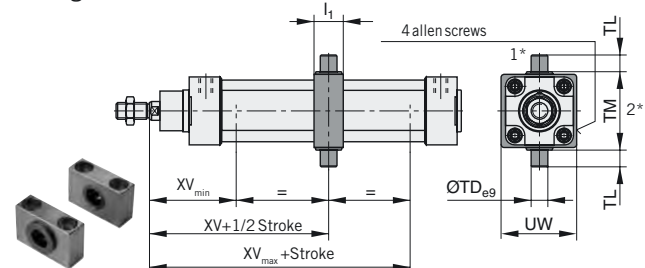
The trunnion mounting can be moved to any position between XV_{min} and XV_{max} after loosening the clamping screws.

Included in delivery: 1 rear trunnion mounting

With the EN mounting, the mounting slot for the magnetic switches is offset 90° from the air connection

Dimensions for Mounting EN, ISO 15552 (ISO 6431) only for series AZZ (tie rod version)

Flange dimensions to ISO 15552 (ISO 6431)



Material: SG cast iron, chromated

- 1* Mounting lugs in same direction as air connection (industrial standard version)
- 2* Mounting lugs offset 90° from air connection

Dimension Table (mm) – for Mounting EN

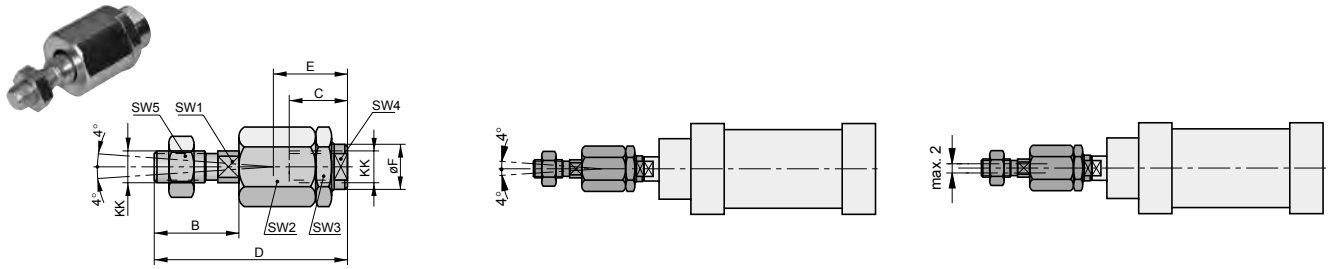
Cyl. Ø	l ₁	ØTD _{eg}	TL	TM	UW	XV _{min}	XV+ 1/2 Stroke	XV _{max} + Stroke
32	15	12	12	50	46	64	73	82
40	20	16	16	63	59	74	82.5	91
50	20	16	16	75	69	78	90	102
63	25	20	20	90	84	82.5	97.5	112.5
80	30	20	20	110	102	96.5	110	123.5
100	32	25	25	132	125	104	120	136

The trunnion mounting can be moved to any position between XV_{min} and XV_{max} after loosening the clamping screws.

Note on EN mounting: To avoid faulty switching, the magnetic switches should be fitted at least 10 to 20 mm away from the EN mounting, depending on cylinder diameter.

Included in delivery: 1 rear trunnion mounting

Compensating Coupling for Piston Rod



Material: steel

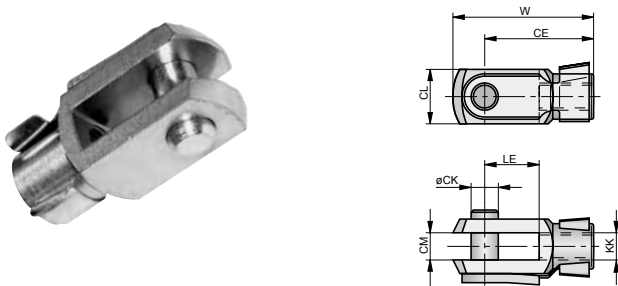
Angle compensation

Radial compensation of centre axis

Order Instructions, Dimension Table (mm), Weight

Order Instructions Type	Order No.	to Cyl.Ø	B	C	D	E	ØF	KK	SW1	SW2	SW3	SW4	SW5	Weight (kg)
AK-M 10x1,25	KY 1129	32	20	23	70	31	21,5	M10x1,25	12	30	30	19	17	0,218
AK-M 12x1,25	KY 1131	40	23	23	67	31	21,5	M12x1,25	12	30	30	19	19	0,207
AK-M 16x1,5	KY 1133	50,63	40	32	112	45	33,5	M16x1,5	19	41	41	30	30	0,637
AK-M 20x1,5	KY 1134	80,100	40	42	122	56	33,5	M20x1,5	19	41	41	30	30	0,711

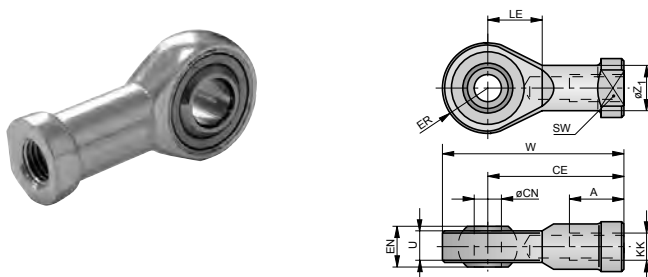
Piston Rod Clevis to ISO 8140 (CETOP RP102P)



Order Instructions, Dimension Table (mm), Weight

Order Instructions Type	Order No.	to Cyl.-Ø	ØCK	CE	CL	CM	KK	LE	W	Weight (kg)
GK-M 10 x 1,25	KY 6135	32	10	40	20	10	M10x1,25	20	52	0,08
GK-M 12 x 1,25	KY 6136	40	12	48	24	12	M12x1,25	24	62	0,125
GK-M 16 x 1,5	KY 6139	50,63	16	64	32	16	M16x1,5	32	83	0,30
GK-M 20 x 1,5	KY 6141	80,100	20	80	40	20	M20x1,5	40	105	0,52

Piston Rod Eye to ISO 8139 (CETOP RP103 P)



Order Instructions, Dimension Table (mm), Weight

Order Instructions Type	Order No.	to Cyl.-Ø	A	CE	øCN	EN	ER	KK	LE	SW	U	W	øZ ₁	Weight (kg)
GA-M 10 x 1,25	KY 6147	32	20	43	10	14	14	M10x1,25	15	17	10,5	57	15	0,072
GA-M 12 x 1,25	KY 6148	40	22	50	12	16	16	M12x1,25	17	19	12	66	17,5	0,107
GA-M 16 x 1,5	KY 6150	50,63	28	64	16	21	21	M16x1,5	22	22	15	85	22	0,21
GA-M 20 x 1,5	KY 6151	80,100	33	77	20	25	25	M20x1,5	26	32	18	102	27,5	0,38

Linear Drive Accessories

Ø 10 – 320 mm

Magnetic Switches



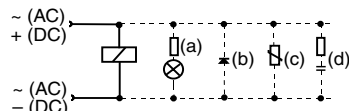
Type **RST**
EST

The next generation of T-slot switches is appealing due to its ease of attachment without the use of special tools. Due to the new electronics, the hysteresis is especially narrow, allowing for a highly accurate switching point.

Connection Examples

Load with protective circuits

- (a) Protective resistor for light bulb
- (b) Freewheel diode on inductivity
- (c) Varistor on inductivity
- (d) RC element on inductivity

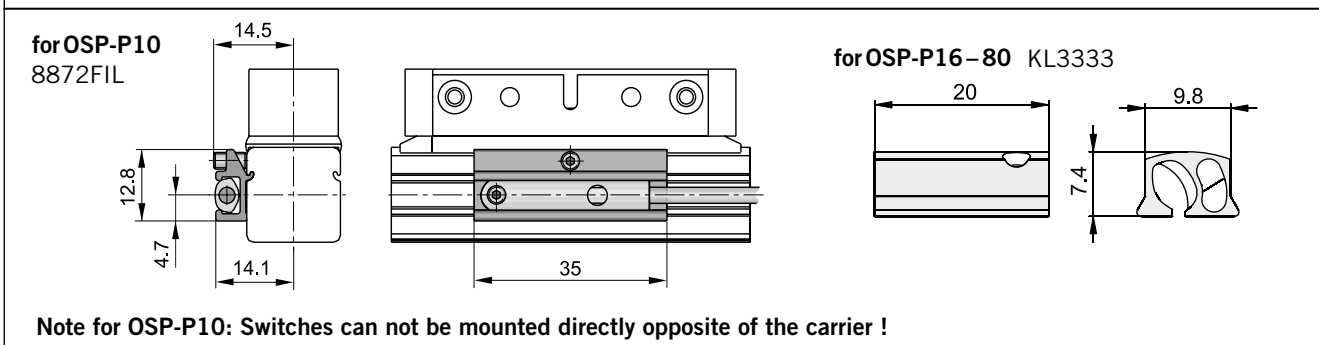
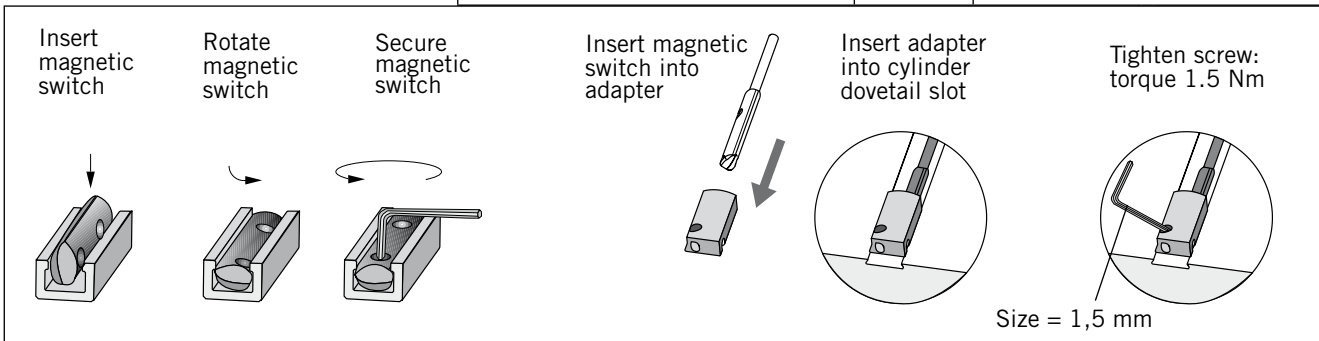


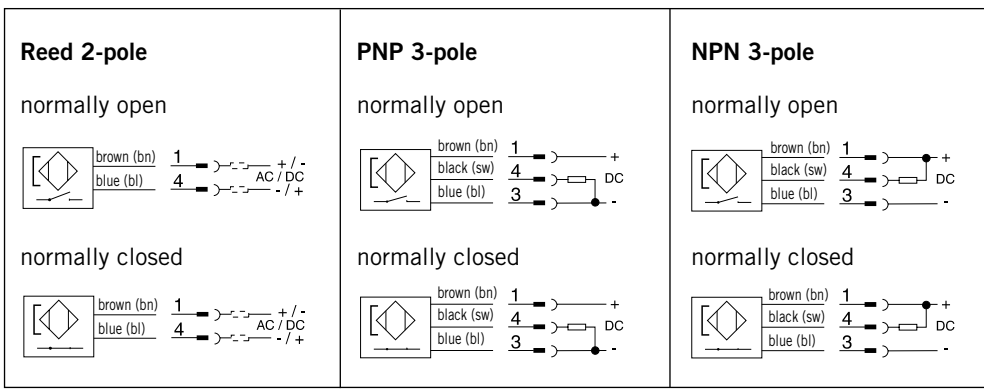
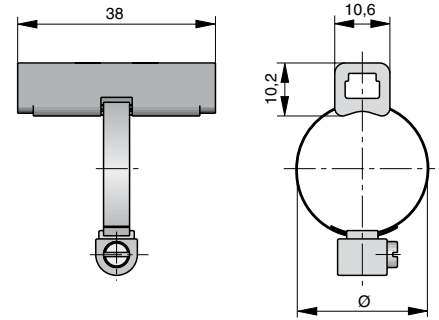
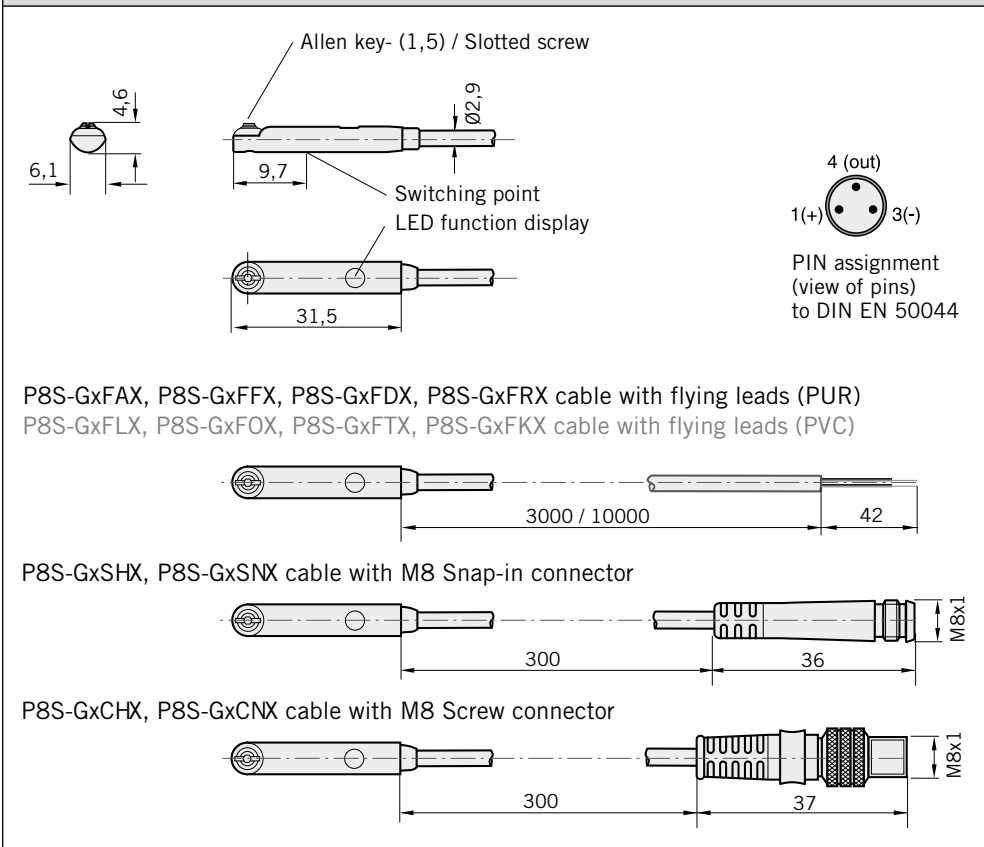
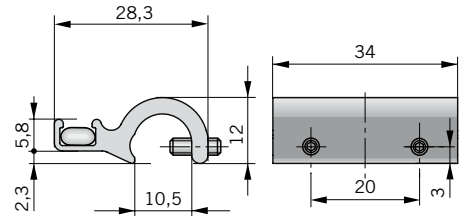
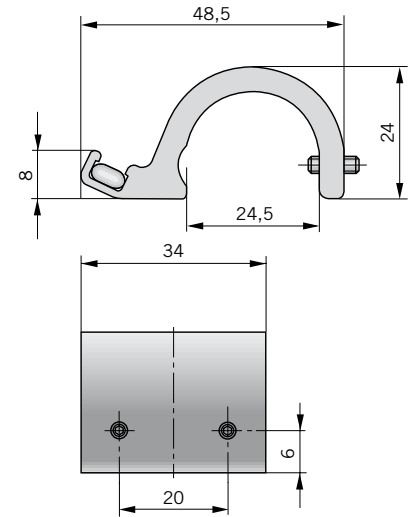
For the type ES, external protective circuits are not normally needed.

$$\text{Minimum response time} = \frac{\text{Switching distance}}{\text{Overrun speed}}$$



Characteristics		RST P8S-GR/GE P8S-GS/GC	EST P8S-GP/GQ P8S-GN/GM
Characteristics	Unit	Description	
Electrical Characteristics			
Switching output /-function		Reed NO/NC	PNP NO/NC NPN NO/NC
Electrical configuration		2-wire	3-wire
Display LED yellow		yes (not Reed NC)	
Operating voltage Ub	V	10-30 AC/DC	10-30 DC
Ripple of Ub	%	≤ 10	≤ 10
Voltage drop	V	≤ 3	≤ 2
Power consumption @ Ub = 24 V switched on, without load	mA	-	≤ 10
Permanent current	mA	≤ 500	≤ 200
Breaking capacity	W	≤ 6	-
Switchable capacity load @ 100 W @ 24 VDC	nF	100	-
Switching frequency	Hz	≤ 400	≤ 1,000
Time delay before availability (on/off)	ms	1.5/0.5	0.5/0.5
Repeatability	mm	≤ 0.2	≤ 0.2
Switching distance	mm	approx. 15	approx. 15
Hysteresis	mm	2	2
EMC following EN 60947-5-2		yes	yes
Lifetime		≥ 20 x 10 ⁶ cycles	unlimited
Short-circuit protection		-	yes
Reverse polarity prot.		-	yes
Power-up pulse suppression		-	yes
Protection for inductive load		-	yes
ATEX -Certification		-	on request
Mechanical Characteristics			
Housing		PA12	
Cable type		PUR/black	
Cable cross section	mm ²	2 x 0.14	3 x 0.14
Bending radius fixed	mm	≥ 30	
Bending radius moving	mm	≥ 45	
Ambient			
Protection class to EN 60529	IP	68	
Ambient temperature range 1)	°C	-30 to +80	
Vibration to EN 60068-2-6	G	30, 11 ms, 10 to 55 Hz, 1 mm	
Shock to EN 60068-2-27	G	50, 11 ms	




Mounting for T-slot switch KL9191(20-25) for Cylinder Series R Ø10-63 mm

Dimensions (mm) - Type RST, EST - Series P8S

Mounting for T-slot switch PD48955 for Cylinder Series AZZ Ø32-100 mm

Mounting for T-slot switch PD48956 for Cylinder Series DZ Ø125-320 mm

Order Number

Magnetic Sensors for all ORIGA Products (except OSP-E..STR)					10-120 AC/DC	10-240 AC/DC	ATEX II 3GD*
	SNAP-in 0,3m	SCREW 0,3m	F.Leads 3m	F.Leads 10m	F.Leads 10m	F.Leads 10m	F.Leads 3m
Reed NO (2-wire)	P8S-GRSHX	P8S-GRCHX	P8S-GRFAX	P8S-GRFDX		P8S-GRFDX2	
Reed NC (2-wire, no LED)	P8S-GESNX	P8S-GECNX	P8S-GEFFX	P8S-GEFRX	P8S-GEFRX1		
PNP NO	P8S-GPSHX	P8S-GPCHX	P8S-GPFAX	P8S-GPFDX			P8S-GPFLX/EX
PNP NC	P8S-GQSHX	P8S-GQCHX	P8S-GQFAX	P8S-GQFDX			
NPN NO	P8S-GNSHX	P8S-GNCHX	P8S-GNFAX	P8S-GNFDX			P8S-GNFLX/EX
NPN NC	P8S-GMSHX	P8S-GMCHX	P8S-GMFAX	P8S-GMFDX			

Magnetic Sensors for OSP-E..STR (low sensitivity)

Reed NO (2-wire), S-slot, flying leads, 5 m	KL3096
Reed NC (2-wire), S-slot, flying leads, 5 m	KL3388
PNP NO (3-wire), S-slot, M8 connector, 100 mm	KL3098

Magnetic Sensor Set for OSP-E..BV

2 sensors, Reed NC (2-wire), 1 mounting rail, 2 magnets	18210
---	-------

Connection Cables suitable for cable chain

M8 Plug with 5 m cable	KL3186
M8 Plug with 10 m cable	KL3217
M8 Plug with 15 m cable	KL3216

 II 3G Ex nA op is IIC T4 Gc X
 II 3D Ex tc IIIC T135°C Dc IP67 X
