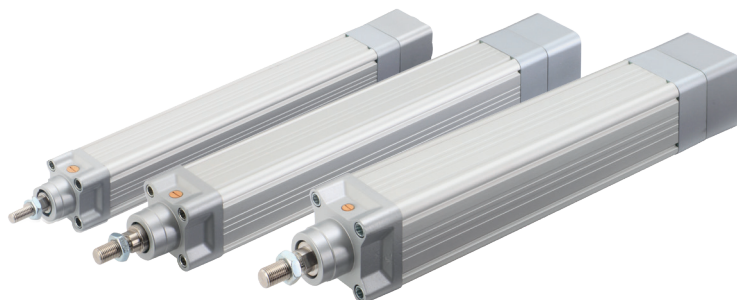


Features

- Modular actuator system in three different sizes
- At least three different screws for each cylinder size
- Inline and parallel motor adapter
- Including EMERSON servo motor
- Customized motor adapter plate on request
- Meets ISO-15552 standards
- High level of precision and repeatability
- Wide range of accessory parts



Benefits

- Optimal for a wide range of power and lifetime requirements
- Wide range of speed and force
- Mechanically fits most applications
- Fits most of brushless DC and servo motors
- Easy implementation in existing application with pneumatic cylinder
- Accurate positioning (depending upon feedback system of the motor)
- Flexibility in mounting cylinders

Performance Overview of Linear Units

Linear Unit –	F_{max} kN	F_{0max} kN	V_{max} mm/s
SPRA-LS-032	0,3	0,7	60
SPRA-BS-032	0,7	0,7	150
SPRA-BN-032	0,63	0,7	500
SPRA-LS-040	0,6	1,5	70
SPRA-BS-040	2,375	2,375	300
SPRA-BN-040	1,55	2,375	826
SPRA-LS-063	1	3,7	70
SPRA-BS-063	5,4	5,4	300
SPRA-BN-063	5,4	5,4	533
SPRA-BL-063	2,8	5,4	1067

Performance Overview of Actuators

Linear Unit –	Motor –	Adapter –	F _{c0} kN	F _{p0} kN	V _{max} mm/s
SPRA-LS-32	IC830M21C	inline / parallel	0,300	0,300	60
SPRA-LS-32	1FK7015	inline / parallel	0,300	0,300	60
SPRA-BS-32	IC830M21C	inline / parallel	0,613	0,700	150
SPRA-BS-32	1FK7015	inline / parallel	0,550	0,700	150
SPRA-BS-32	1FK7022	inline	0,700	0,700	150
SPRA-BN-32	IC830M21C	inline / parallel	0,206	0,630	500
SPRA-BN-32	1FK7015	inline / parallel	0,185	0,528	500
SPRA-BN-32	1FK7022	inline	0,449	0,630	500
SPRA-LS-40	IC830M23E	inline / parallel	0,600	0,600	70
SPRA-LS-40	1FK7022	inline / parallel	0,600	0,600	70
SPRA-BS-40	IC830M23E	inline / parallel	1,239	2,375	300
SPRA-BS-40	1FK7022	inline / parallel	0,908	2,375	300
SPRA-BS-40	1FK7034	inline / parallel	1,709	2,375	300
SPRA-BN-40	IC830M23E	inline / parallel	0,494	1,550	826
SPRA-BN-40	1FK7022	inline / parallel	0,362	1,447	826
SPRA-BN-40	1FK7034	inline / parallel	0,681	1,550	826
SPRA-LS-63	IC830M43G	inline / parallel	1,000	1,000	70
SPRA-LS-63	1FK7034	inline / parallel	0,980	1,000	70
SPRA-BS-63	IC830M43G	inline / parallel	3,311	5,400	300
SPRA-BS-63	1FK7034	inline / parallel	1,709	5,400	300
SPRA-BS-63	1FK7044	inline	4,273	5,400	300
SPRA-BN-63	IC830M43G	inline / parallel	1,656	5,400	533
SPRA-BN-63	1FK7034	inline / parallel	0,855	3,471	533
SPRA-BN-63	1FK7044	inline	2,136	5,400	533
SPRA-BL-63	IC830M43G	inline / parallel	0,838	2,800	1067
SPRA-BL-63	1FK7034	inline / parallel	0,432	1,756	1067
SPRA-BL-63	1FK7044	inline	1,081	2,800	1067

Engineering Information

For more details and calculation methods, click [here](#) or scan the QR code below.



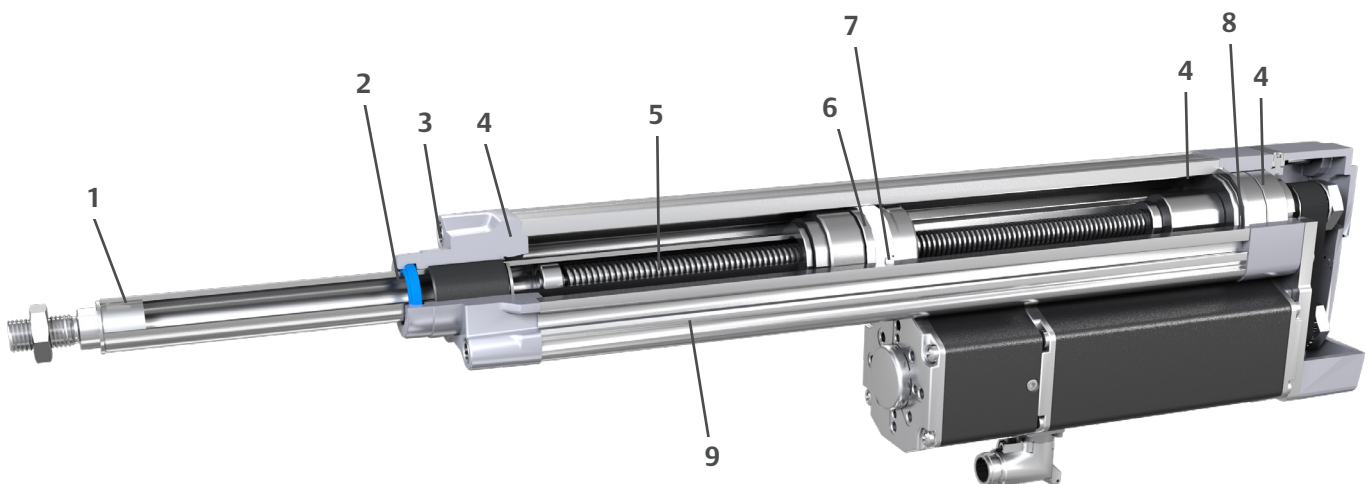
Product Description

SPRA Electric Rod-Style Actuators are ideally suited to perform fast and powerful linear movements. SPRA electric actuators are flexible and thus can be positioned precisely.

The SPRA modular concept enables easy connection to your preferred motor and control system. This can reduce design and programming costs considerably.

Thanks to high grade materials, a sealing system with IP54S level protection and high quality manufacturing, SPRA electric actuators can also be used long term even under adverse conditions.

The low backlash design provides positioning precision of up to $\pm 0,01$ mm. Together with various screws for different speeds and forces, SPRA electric actuators are the optimum solution for a variety of applications.



1. Stainless steel push tube
2. Shaft seal to protect against contaminants ingress
3. Sinter filter for high airflow
4. Flat seal between housings
5. High quality ball and lead screws with low axial play and low friction, lubricated for the whole product life
6. Magnet ring for proximity sensors
7. Anti-rotation device with overload protection
8. High-quality bearings
9. Anodised aluminium profile with proximity sensor slots

SPRA-32

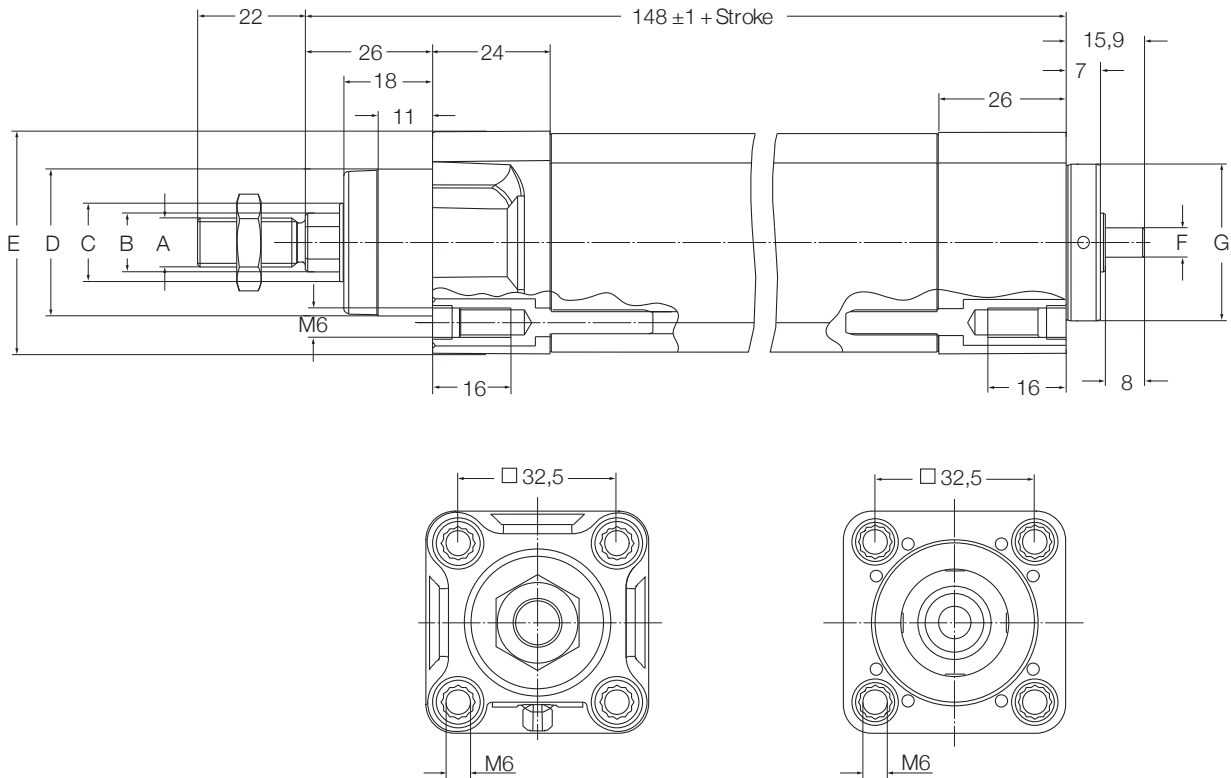
Linear unit

**Technical Data**

Designation	Symbol	Unit	SPRA-32-LS	SPRA-32-BS	SPRA-32-BN
Performance Data					
Max. dynamic axial force	F_{max}	kN	0,3	0,7	0,63
Max. static axial force	F_{0max}	kN	0,7	0,7	0,7
Dynamic load capacity	C	kN	N/A	2,8	2,5
Maximum torque to reach F_{max}	M_{max}	Nm	0,24	0,45	1,19
Max. linear speed	v_{max}	mm/s	60	150	500
Max. rotational speed	n_{max}	1/min	2400	3000	3000
Max. acceleration	a_{max}	m/s ²	1	6	6
Duty cycle	D_{unit}	%	60	100	100
Mechanical Data					
Screw type	–	–	Lead screw	Ball screw	Ball screw
Screw diameter	d_{screw}	mm	9	10	10
Screw lead	p_{screw}	mm	1,5	3	10
Lead accuracy	–	–	N/A	G7	G7
Stroke	s	mm	50...400	50...400	50...400
Internal overstroke each side	s_0	mm	1	1	1
Backlash	$S_{backlash}$	mm	N/A	0,06	0,06
Efficiency	η_{lu}	%	30	75	84
Inertia @ 0 mm stroke	J_{lu}	10 ⁻⁴ kgm ²	0,0413	0,0420	0,0420
Δ Inertia per 100 mm stroke	ΔJ	10 ⁻⁴ kgm ²	0,0036	0,0047	0,0047
Weight @ 0 mm stroke	m_{lu}	kg	0,74	0,74	0,74
Δ weight per 100 mm stroke	Δm	kg	0,34	0,34	0,34
Environment and Standards					
Ambient temperature	$T_{ambient}$	°C	0...+50	0...+50	0...+50
Max. humidity	ϕ	%	95	95	95
Degree of protection ⁽¹⁾	IP	–	54S	54S	54S
Standard	–	–	ISO 15552	ISO 15552	ISO 15552

(1) IP65S protection on request. Please contact Emerson.

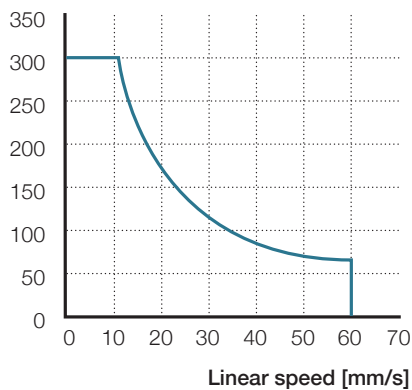
Dimensions (mm)



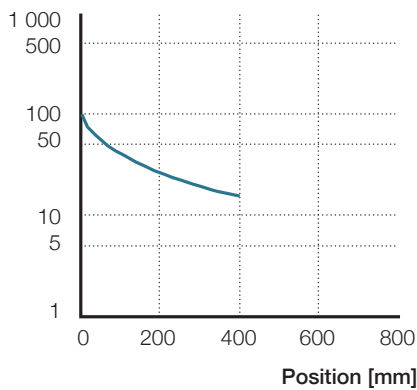
	A	B mm	C	D	E	F	G	
SPRA-32	M10 × 1,25	Ø12	Ø16	Ø30d11	□45,7	Ø6h6	Ø32	-0,05 -0,07

Performance Diagrams

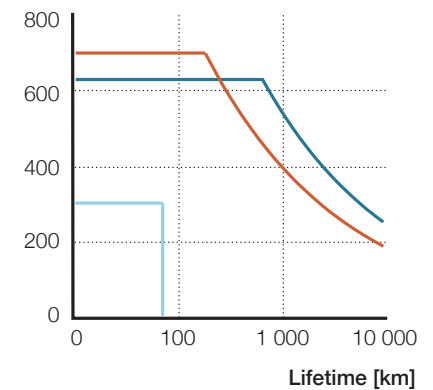
Axial force [N]



Radial load [N]



F_m [N]



Valid only for SPRA-LS-32.
No limitation for ball screw types
(max. load at max. speed).

The radial load acts perpendicular to the
moving direction.

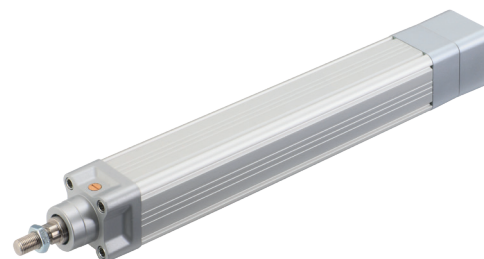
[SPRA-BN-032](#)

[SPRA-BS-032](#)

[SPRA-LS-032](#)

SPRA-40

Linear unit

**Technical Data**

Designation	Symbol	Unit	SPRA-LS-040	SPRA-BS-040	SPRA-BN-040
Performance Data					
Max. dynamic axial force	F_{max}	kN	0,6	2,375	1,55
Max. static axial force	F_{0max}	kN	1,5	2,375	2,375
Dynamic load capacity	C	kN	N/A	4,8	6
Maximum torque to reach F_{max}	M_{max}	Nm	0,63	2,22	3,64
Max. linear speed	v_{max}	mm/s	70	300	826
Max. rotational speed	n_{max}	1/min	1680	3600	3900
Max. acceleration	a_{max}	m/s^2	1	6	6
Duty cycle	D_{unit}	%	60	100	100
Mechanical Data					
Screw type	–	–	Lead screw	Ball screw	Ball screw
Screw diameter	d_{screw}	mm	12,5	12	12,7
Screw lead	p_{screw}	mm	2,5	5	12,7
Lead accuracy	–	–	N/A	G7	G7
Stroke	s	mm	100...600	100...600	100...600
Internal overstroke each side	s_0	mm	1	1	1
Backlash	$s_{backlash}$	mm	N/A	0,07	0,07
Efficiency	η_{lu}	%	38	85	86
Inertia @ 0 mm stroke	J_{lu}	$10^{-4} kgm^2$	0,1262	0,1246	0,1279
Δ Inertia per 100 mm stroke	ΔJ	$10^{-4} kgm^2$	0,0123	0,0103	0,0144
Weight @ 0 mm stroke	m_{lu}	kg	1,25	1,26	1,29
Δ weight per 100 mm stroke	Δm	kg	0,46	0,46	0,46
Environment and Standards					
Ambient temperature	$T_{ambient}$	°C	0...+50	0...+50	0...+50
Max. humidity	ϕ	%	95	95	95
Degree of protection ⁽¹⁾	IP	–	54S	54S	54S
Standards	–	–	ISO 15552	ISO 15552	ISO 15552

(1) IP65S protection on request. Please contact Emerson.

SPRA-63

Linear unit

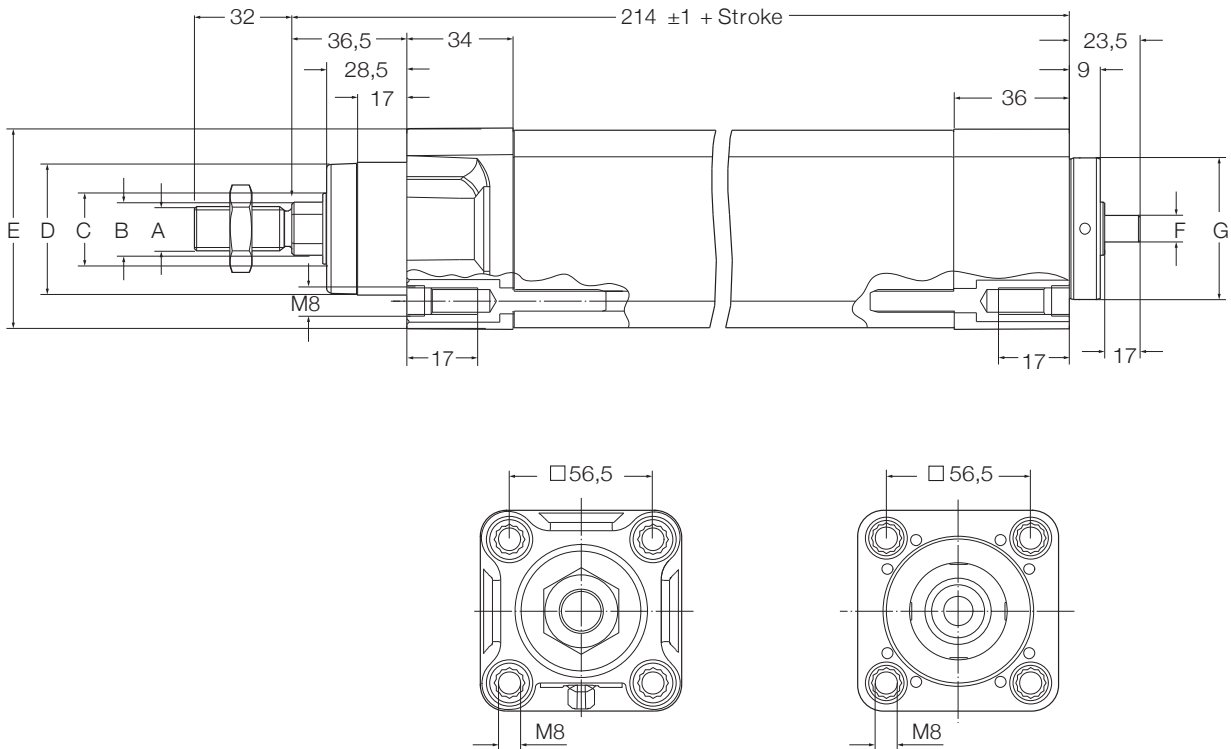


Technical Data

Designation	Symbol	Unit	SPRA-LS-063	SPRA-BS-063	SPRA-BN-063	SPRA-BL-063
Performance Data						
Max. dynamic axial force	F_{max}	kN	1	5,4	5,4	2,8
Max. static axial force	F_{0max}	kN	3,7	5,4	5,4	5,4
Dynamic load capacity	C	kN	N/A	13,7	21	10
Maximum torque to reach F_{max}	M_{max}	Nm	1,63	5,06	10,11	10,36
Max. linear speed	v_{max}	mm/s	70	300	533	1067
Max. rotational speed	n_{max}	1/min	1050	3600	3200	3200
Max. acceleration	a_{max}	m/s ²	1	5	6	6
Duty cycle	D_{unit}	%	60	100	100	100
Mechanical Data						
Screw type	–	–	Lead screw	Ball screw	Ball screw	Ball screw
Screw diameter	d_{screw}	mm	20	20	20	20
Screw lead	p_{screw}	mm	4	5	10	20
Lead accuracy	–	–	N/A	G7	G7	G7
Stroke	s	mm	100...800	100...800	100...800	100...800
Internal overstroke each side	s_0	mm	1	1	1	1
Backlash	$s_{backlash}$	mm	N/A	0,07	0,07	0,07
Efficiency	η_{lu}	%	39	85	85	86
Inertia @ 0 mm stroke	J_{lu}	10 ⁻⁴ kgm ²	0,76	0,76	0,7600	0,7636
Δ Inertia per 100 mm stroke	ΔJ	10 ⁻⁴ kgm ²	0,0809	0,12	0,0809	0,0855
Weight @ 0 mm stroke	m_{lu}	kg	2,80	2,9	2,90	2,90
Δ weight per 100 mm stroke	Δm	kg	0,81	0,81	0,81	0,81
Environment and Standards						
Ambient temperature	$T_{ambient}$	°C	0...+50	0...+50	0...+50	0...+50
Max. humidity	ϕ	%	95	95	95	95
Degree of protection ⁽¹⁾	IP	–	54S	54S	54S	54S
Standards	–	–	ISO 15552	ISO 15552	ISO 15552	ISO 15552

(1) IP65S protection on request. Please contact Emerson.

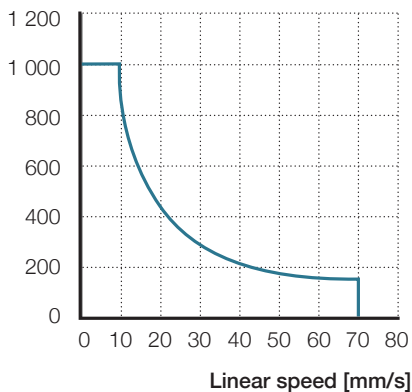
Dimensions (mm)



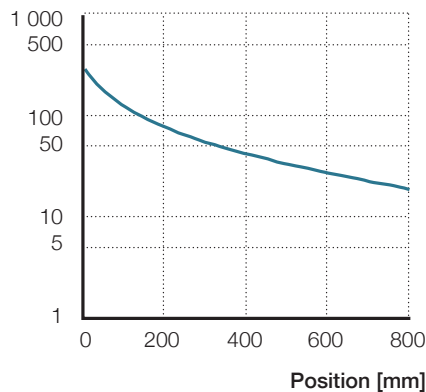
	A	B mm	C	D	E	F	G
SPRA-63	M16 × 1,5	Ø20	Ø28	Ø45d11	□75	Ø12h6	Ø60 -0.05 -0.08

Performance Diagrams

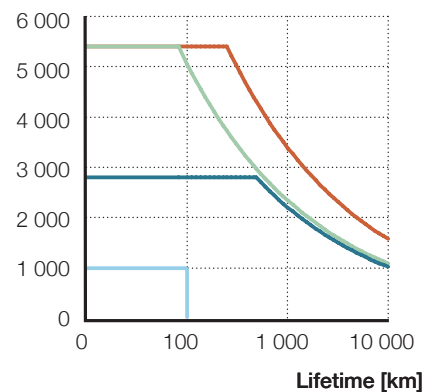
Axial force [N]



Radial load [N]



F_m [N]



Valid only for SPRA-LS-063.
No limitation for ball screw types
(max. load at max. speed).

The radial load acts
perpendicular to the moving
direction.

SPRA-BL-063

SPRA-BN-063

SPRA-LS-063

SPRA-BS-063

Series

SPRA-32/40/63

Ordering Key

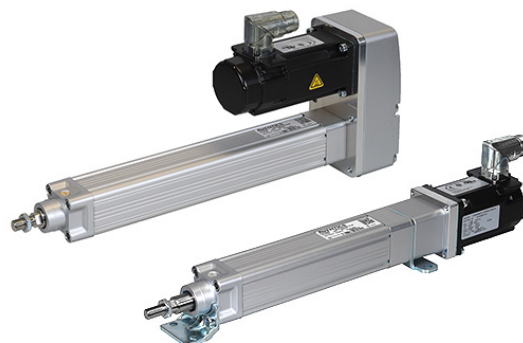
Stroke	SPRA-LS-032	SPRA-BS-032	SPRA-BN-032	SPRA-LS-040	SPRA-BS-040	SPRA-BN-040	SPRA-LS-063	SPRA-BS-063	SPRA-BN-063	SPRA-BL-063
50	R481633796	R481633802	R481633808	-	-	-	-	-	-	-
100	R481633797	R481633803	R481633809	R481633814	R481633820	R481633826	R481633832	R481633840	R481633848	R481633856
150	R481633798	R481633804	R481633810	-	-	-	-	-	-	-
200	R481633799	R481633805	R481633811	R481633815	R481633821	R481633827	R481633833	R481633841	R481633849	R481633857
300	R481633800	R481633806	R481633812	R481633816	R481633822	R481633828	R481633834	R481633842	R481633850	R481633858
400	R481633801	R481633807	R481633813	R481633817	R481633823	R481633829	R481633835	R481633843	R481633851	R481633859
500	-	-	-	R481633818	R481633824	R481633830	R481633836	R481633844	R481633852	R481633860
600	-	-	-	R481633819	R481633825	R481633831	R481633837	R481633845	R481633853	R481633861
700	-	-	-	-	-	-	R481633838	R481633846	R481633854	R481633862
800	-	-	-	-	-	-	R481633839	R481633847	R481633855	R481633863

Motors and Gearboxes

Servo Motors

The EMERSON motors come with a Hiperface DSL encoder, a shaft end with no key-way and a holding brake if required. In addition, they are equipped with a single connector. A rotating plug adapter simplifies the connection and cable routing in all installation positions.

For more information, click [here](#) or scan the QR code below.



Adapters for Servo Motors

Motor	SPRA-32		SPRA-40		SPRA-63	
	Inline Adapter	Parallel Adapter	Inline Adapter	Parallel Adapter	Inline Adapter	Parallel Adapter
IC830M21C-KKxx	R412028526	R412028525	-	-	-	-
IC830M23E-CKxx	-	-	R412028528	R412028527	-	-
IC830M43G-GCxx	-	-	-	-	R412028530	R412028529
1FK7015-5AK-71-1SH3	R412028538	R412028537	-	-	-	-
1FK7022-5AK71-1UH3	R412028539	-	R412028542	R412028540	-	-
1FK7034-2AK71-1UH0	-	-	R412028543	R412028541	R412028545	R412028544
1FK7044-4CH71-1UH0	-	-	-	-	R412028546	-

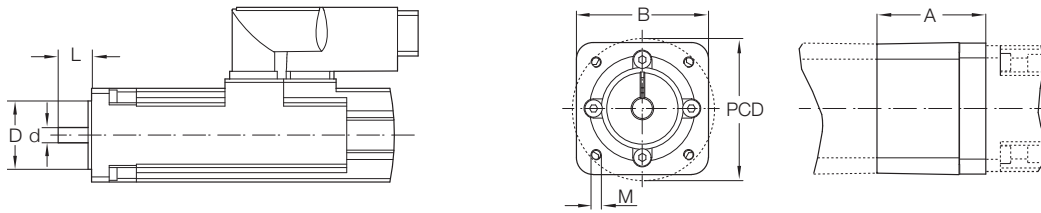
Ordering Key

SPRA	Motor		Drive	Hybrid Cable	
	Ordering Key	Option	Ordering Key	Ordering Key	Length
32	IC830M21C-KK92GF00	brake	IC830DP00306	CCJ1A2-015-003-00	3m
	IC830M21C-KK9NGF00	no brake		CCJ1A2-015-006-00	6m
				CCJ1A2-015-009-00	9m
40	IC830M23E-CK92GF00	brake	IC830DP00306 or IC830DP00606	CCJ1A2-015-003-00	3m
	IC830M23E-CK9NGF00	no brake		CCJ1A2-015-006-00	6m
				CCJ1A2-015-009-00	9m
63	IC830M43G-GC92GF00	brake	IC830DP00607 or IC830DP01207	CCJ2A2-015-003-00	3m
	IC830M43G-GC9NGF00	no brake		CCJ2A2-015-006-00	6m
				CCJ2A2-015-009-00	9m

Series

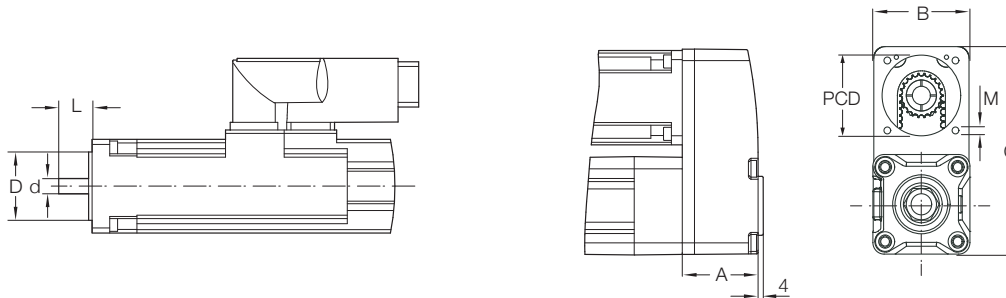
SPRA-32/40/63

Inline Interface



Interface	d mm	D	L	PCD	M	A mm	B	Torque max Nm	Inertia 10 ⁻⁴ kgm ⁻²	Weight kg
SPRA-32										
R412028526	9	50	25	70	M5	49,4	58	4	0,06	0,3
R412028538	8	30	20	46	M4	40,9	46	2	0,006	0,25
R412028539	9	40	20	64	M5	49,4	55	4	0,06	0,3
SPRA-40										
R412028528	14	50	30	70	M5	49,9	58	12	0,06	0,3
R412028542	9	40	20	63	M5	49,4	55	12	0,06	0,3
R412028543	14	60	30	75	M6	52,4	72	12	0,06	0,3
SPRA-63										
R412028530	14	80	30	100	M6	53,9	84	25	0,2	0,85
R412028545	14	60	30	75	M6	62,4	75	25	0,200	0,85
R412028546	19	80	40	100	M6	70,9	100	25	0,200	0,85

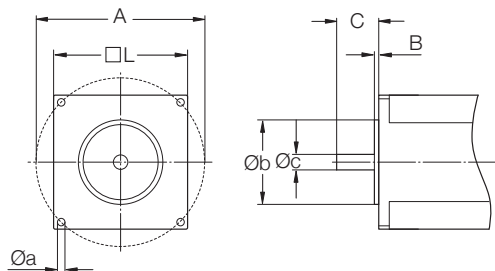
Parallel Interface



Interface	d mm (in)	D	L	PCD	M	A mm	B	C	Torque Max Nm	Inertia 10 ⁻⁴ kgm ⁻²	Weight kg
SPRA-32											
R412028525	9	50	25	70	M5	58,1	74,1	157,3	5,5	0,58	2
R412028537	8	30	20	46	M4	40,1	45,1	93,3	1	0,021	0,35
SPRA-40											
R412028527	14	50	30	70	M5	58,1	74,1	157,3	5,5	0,58	2
R412028540	9	40	20	63	M5	47,1	56,6	115,3	3	0,1	0,55
R412028541	14	60	30	75	M6	58,1	74,1	157,3	5,5	0,58	2
SPRA-63											
R412028529	14	80	30	100	M6	82,1	110	225,7	12	10,157	5,5
R412028544	14	60	30	75	M6	58,1	74,1	157,3	5,5	0,58	2

Third Party Motors

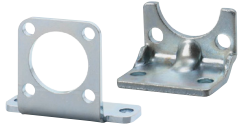
In order to attach your preferred motor to the linear unit, Emerson offers tailor made solutions within the specifications below. Please contact Emerson for customized adapters.



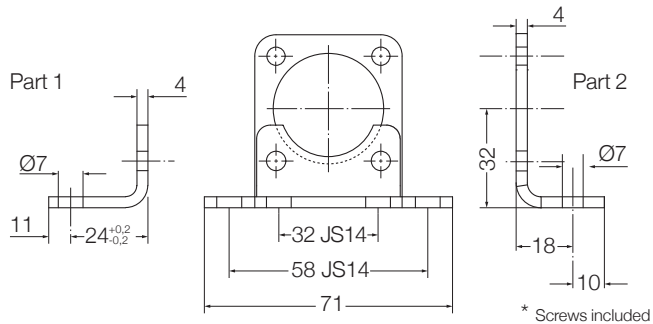
Order #	SPRA-32		SPRA-40			SPRA-63	
	Inline Adapter mm	Parallel Adapter mm (in)	Inline Adapter mm	Parallel Adapter mm (in)	Parallel Adapter mm	Inline Adapter mm	Parallel Adapter mm
□L	20...any value	20...47,5	40...any value	30...62	30...110	60...any value	30...86
Øb	31...75	15...32	31...75	20...44	20...65	47...95	20...65
B	1...7	1...10	1...5	1...3	1...4	1...5	1...4
ØA	36...106	19...49	36...106	24...68	24...89	52...103	24...89
Øc	6...14	6, 8, (1/4)	8...14	8, 9, (1/4), (3/8)	8, 11, 12, 13, 14	11...19	8, 11, 12, 13, 14
C	13...33	15...40	13...33	16...41	15...32	15...48	15...32

Accessories

**SPRA-32
Foot mounting MS1 and MS2***



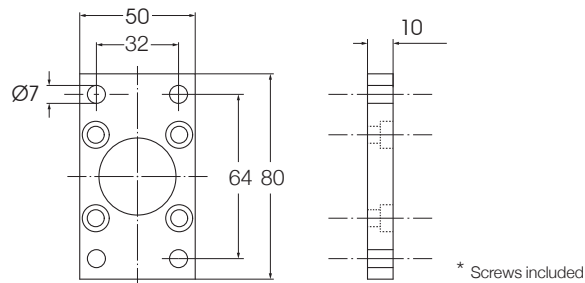
Note: The foot mounting MS2 between the linear unit and the adapter kit increases the length of the inline version by 4 mm



Ordering key
1827001271
For parallel version (2x part 1)

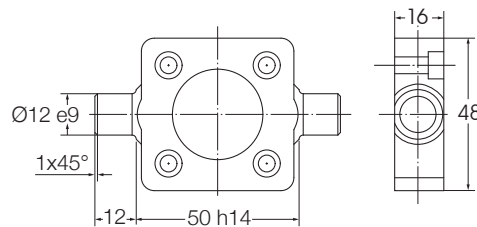
Ordering key
R412028468
For inline version
(part 1 + part 2)

Flange mounting MF1 and MF2*



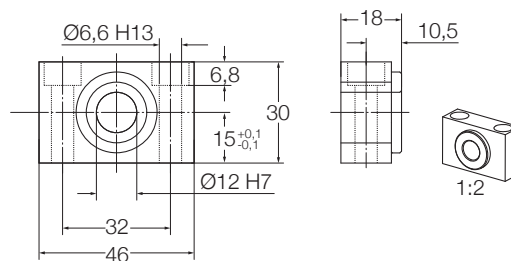
Ordering key
1827001277

Trunnion mounting MT5 and MT6*



Ordering key
1827001609

Bearing AT4

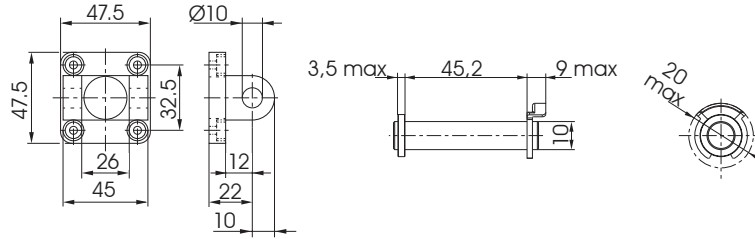


Note: To be used with trunnion flange kit or Trunnion mounting kit

Ordering key
1827001603

Accessories

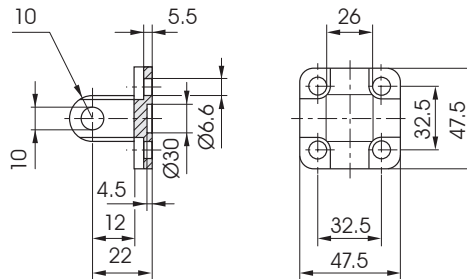
SPRA-32 Clevis mounting MP2



Ordering key MP2*

1827001289
For parallel version only;
bolt 1823120020 needs to
be ordered separately

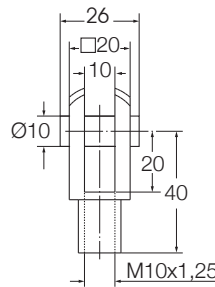
Rear eye MP4



Ordering key

1827001283
For parallel version only

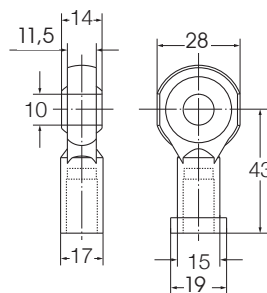
Rod clevis AP2



Ordering key

1822122024

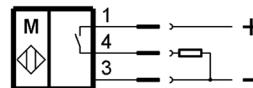
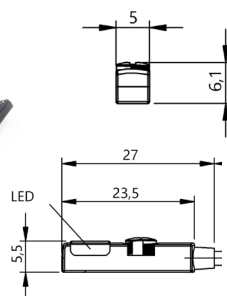
Ball eye rod end AP6



Ordering key

1822124003

Proximity sensor



Switching function
Output signal
Rated voltage
Max. current

Normally open
PNP
24 V DC
200 mA

Ordering Key	Electrical Connection Type	Cable Length
R412028554	open cable ends	5m
R412028555	M8 Plug	0,3m

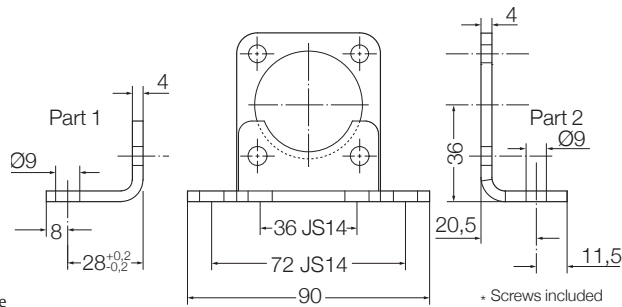
Series
SPRA-32/40/63

Accessories

SPRA-40 Foot mounting MS1 and MS2*



Note: The foot mounting MS2 between the linear unit and the adapter kit increases the length of the inline version by 4 mm



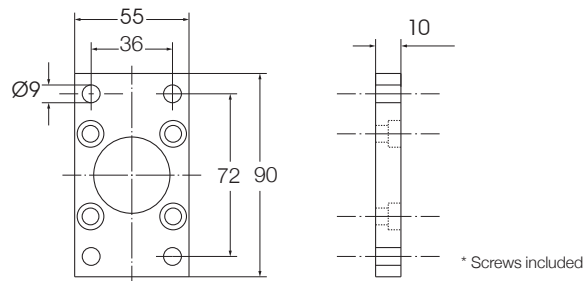
Ordering key

1827001272
For standard parallel adapter version
1827001498
For bigger parallel adapter version
(valid for R412028541 adapter references)

Ordering key

R412028469
For inline version (part 1 + part 2)

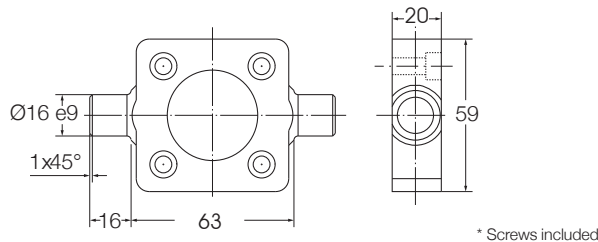
Flange mounting MF1 and MF2*



Ordering key

1827001278

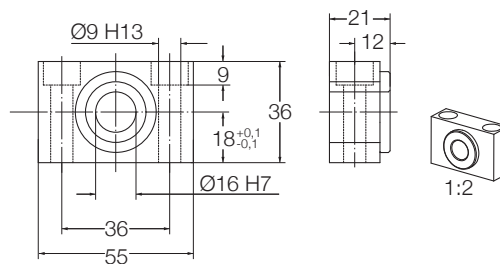
Trunnion mounting MT5 and MT6*



Ordering key

1827001610

Bearing AT4



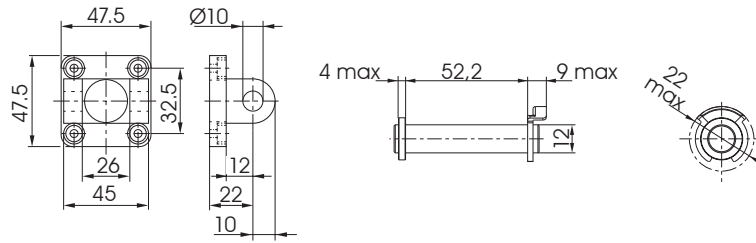
Note: To be used with trunnion flange kit or Trunnion mounting kit

Ordering key

1827001604

Accessories

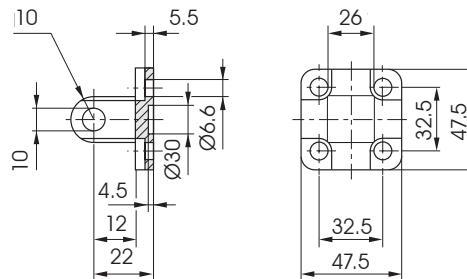
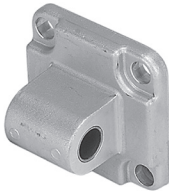
SPRA-40 Clevis mounting MP2



Order key MP2*

1827001290
For parallel version only; bolt 1823120021 needs to be ordered separately. For parallel adapters R412028541 see SPRA-63 equivalent accessories.

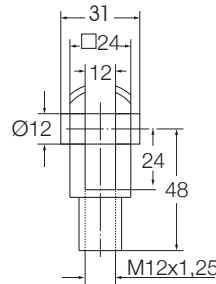
Rear eye MP4



Ordering key

1827001284
For parallel version only. For parallel adapters R412028541 see SPRA-63 equivalent accessories.

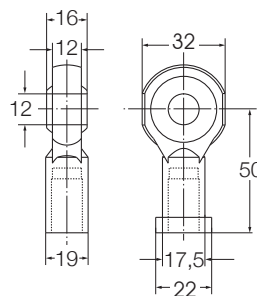
Rod clevis AP2



Ordering key

1822122025

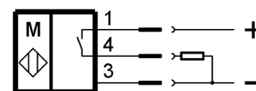
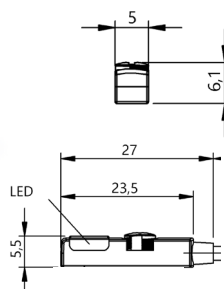
Ball eye rod end AP6



Ordering key

1822124004

Proximity sensor



Switching function: Normally open
Output signal: PNP
Rated voltage: 24 V DC
Max. current: 200 mA

Ordering Key	Electrical Connection Type	Cable Length
R412028554	open cable ends	5m
R412028555	M8 Plug	0,3m

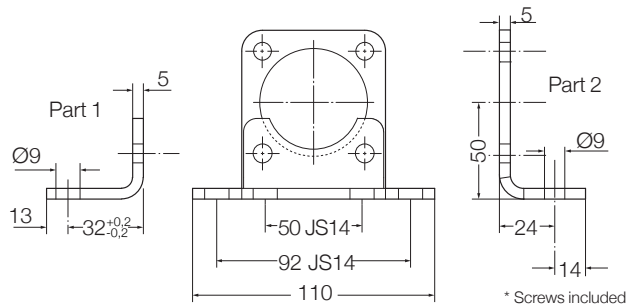
Series
SPRA-32/40/63

Accessories

SPRA-63 Foot mounting MS1 and MS2*



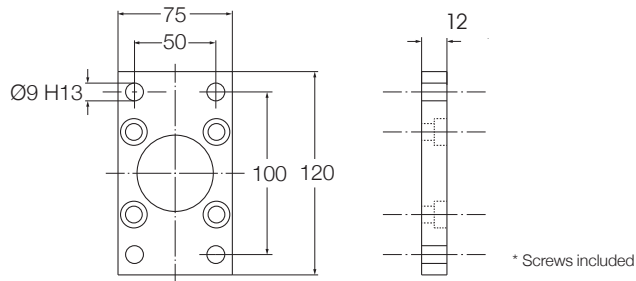
Note: The foot mounting MS2 between the linear unit and the adapter kit increases the length of the inline version by 5 mm



Ordering key
1827001498
For parallel version with large adapter (dimensional information on request)

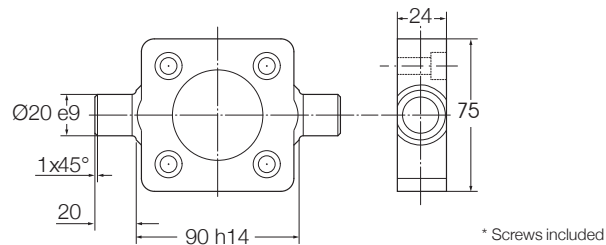
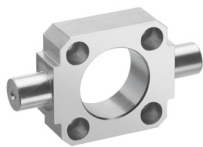
Ordering key
R412028470
For inline version (part 1 + part 2)

Flange mounting MF1 and MF2*



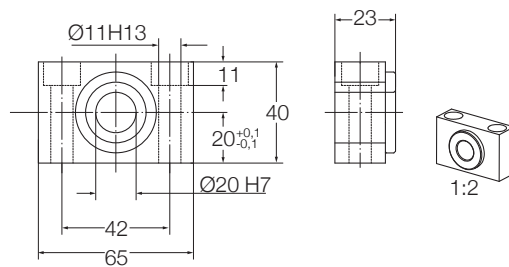
Ordering key
1827001499

Trunnion mounting MT5 and MT6*



Ordering key
1827002046

Bearing AT4

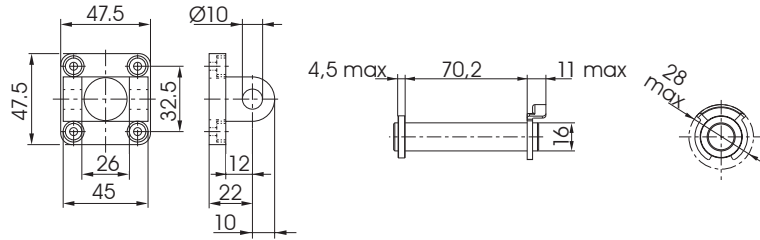


Ordering key
1827001605

Note: To be used with trunnion flange kit or Trunnion mounting kit

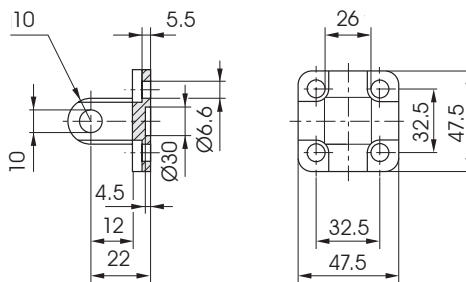
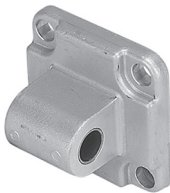
Accessories

SPRA-63 Clevis mounting MP2



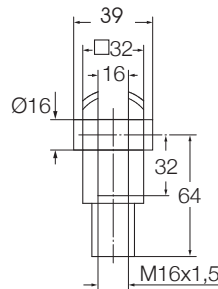
Ordering key
1827001500
For parallel version only;
bolt 1823120023 needs to
be ordered separately

Rear eye MP4



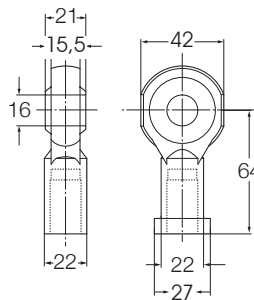
Ordering key
1827020086
For parallel version only

Rod clevis AP2



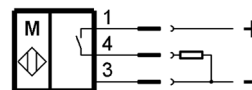
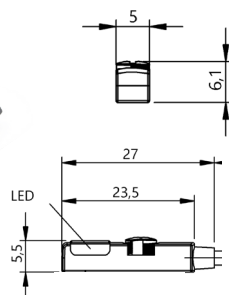
Ordering key
1822122005

Ball eye rod end AP6



Ordering key
1822124005

Proximity sensor



Switching function
Output signal
Rated voltage
Max. current

Normally open
PNP
24 V DC
200 mA

Ordering Key	Electrical Connection Type	Cable Length
R412028554	open cable ends	5m
R412028555	M8 Plug	0,3m