

Technical description:

- 1) Anodised aluminium housing with a pushrod made of aluminium or steel
- 2) Internal interference suppression according to EN55011
- 3) Disconnection in both end positions through internal limit switches
- 4) Electronic overload emergency disconnection
- 5) Electric parallel connection possible (NOTE: but no synchronized operation)
- 6) Eye bolt Ø6, Ø8 (standard) or Ø10mm
- 7) Clevis Ø6, Ø8 or Ø10mm
- 8) Light grey silicone connection cable - standard length 2,5m; other lengths on request
--> with standard version: 2x2.5qmm / cable jacket Ø approx. 9mm
--> with option E: 2x2.5qmm / 3x1.5qmm / cable jacket Ø approx. 11mm

Possible options:

- 1) Various versions with bottom mountings:
It is also possible to design actuators with bottom mountings (see data sheet 07.021.DAT.01.xx).
- 2) Various push rod suspensions:
See the data sheet 07.021.DAT.02.xx.
- 3) RAL colour.... (on request):
The actuator housing can be provided in various shades of RAL colours. For example, if option "RAL3000" is indicated, the housing will be painted in RAL3000 (red)
- 4) Option E:
Internal floating limit switch (Option E=opener) for both end positions;
load capacity 24VDC/1A (e.g. for position indication)

Ordering designation:

SG(typ)/(pushrod) - (stroke) - (pushrod mounting) - (cable length) - (options)

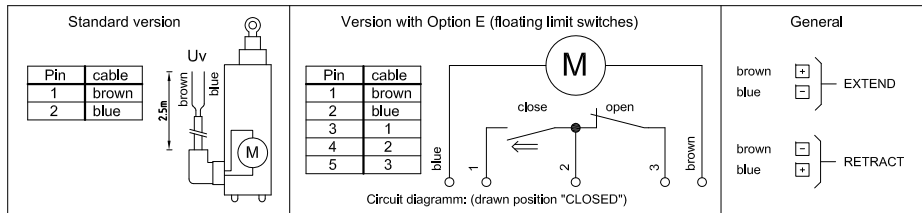
Legend:

type: actuator type to be selected from the list
push rod: depending on type (see table, Ø25A/Ø25 : aluminum, Ø25S: steel)
stroke: stroke [mm]
Push rod ending: - eye bolt (standard): bore hole of the eye bolt [mm].
- clevis: bore hole and length of slot of the clevis [mm].

cable length: length of connection cable [m]
protection class: protection class according to DIN EN 60 529
options: list of all desired options

Ordering example: SG13P/25 - 750 - 8 - 2,5 - RAL 3000

Connection diagrams:



General technical data:

sealing version	standard	permissible ambient temperature	-25°C - +60°C
rated voltage	24VDC	max. permissible temp. to EN 12101-2 attachment G	300° - 30min
no load current	0,8A	protection type according to DIN EN 60 529	IP 54

- 1) The maximum stroke with full load is the stroke, that an actuator is able to extend with full load without spindle permanently bended. For greater strokes a pushing force must be reduced. Corresponding force-stroke diagrams can be supplied by us on request.
- 2) The stability is the maximum pulling force that may occur on the retracted push rod. (locking force = holding force)
- 3) Either an actuator is being extended under a load and supporting load, while being retracted or retracting under a load and supporting, while being extended.
- 4) Starting current I_A [A] = supply voltage U_V [V] / terminal resistance R_A [Ω]
When determining U_V , observe the resistances (internal resistance voltage source, line resistances, ...) to the actuator connection cable.
- 5) At $U_V=24V$.

Diese Zeichnung ist Eigentum der
Fa. Grasl GmbH A-3454 Reidling, EuropastraÙ 1
Die Weiterverwendung oder Vervielfältigung ohne unser schriftliches Einverständnis ist verboten!

Technical data of actuator types SG08x:

Designation	SG08A	SG08B	SG08C	SG08D	SG08E	SG08F	SG08G	SG08H	SG08J	SG08K	SG08L	SG08M	SG08N	SG08P	SG08R	Unit
Pushing and pulling force (full load)	820	530	380	300	210	550	360	260	200	150	1080	700	510	390	280	N
Theoretical pressure force during deadlock 5)	4000	2400	1800	1400	1000	2600	1600	1200	1000	600	5000	3000	2200	1600	1200	N
Current with full load	0.8															A
Speed (no load)	5.5	10.0	14.0	17.9	24.8	8.3	15.1	20.9	26.9	37.2	4.1	7.5	10.5	13.5	18.6	mm/s
Speed at full load	4.1	7.5	10.4	13.4	18.5	6.2	11.2	15.6	20.0	27.7	3.1	5.6	7.8	10.0	13.9	mm/s
Maximum stroke at full load 1)	1120	1391	1640	1859	2186	2355	2927	3449	3911	4599	690	857	1010	1145	1347	mm
Terminal resistance R_A at 20°C 4)	7.7															Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 4min.															
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 36% ³⁾ (Maximum time of operation in one direction: 4min)															
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)															N
Possible torque tube versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S					Ø25A, Ø25, Ø25S					mm
Standard bearing pin diameter	Ø12															mm
Dimensions (see dimensional drawing):	Figure 1															

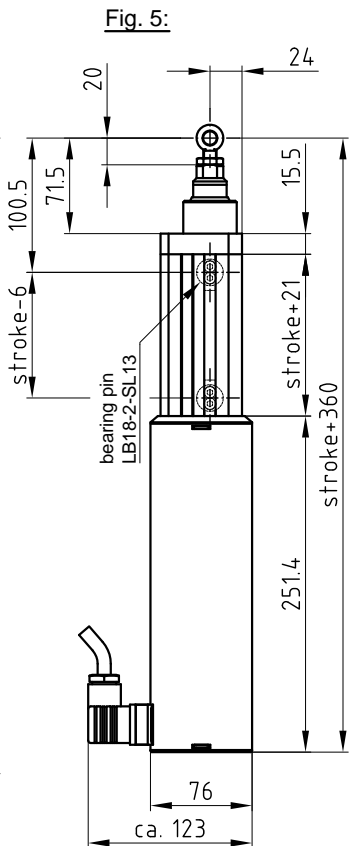
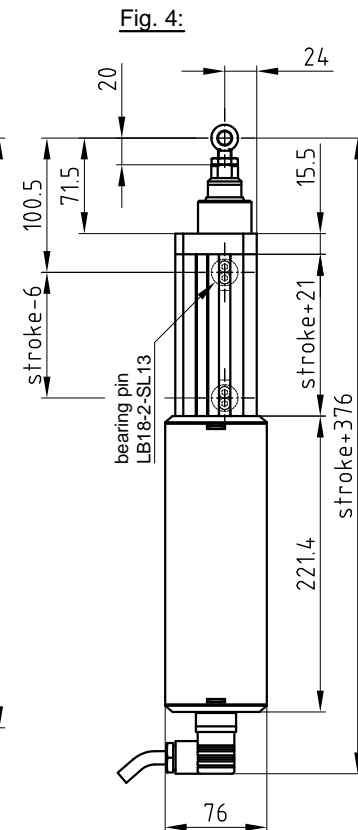
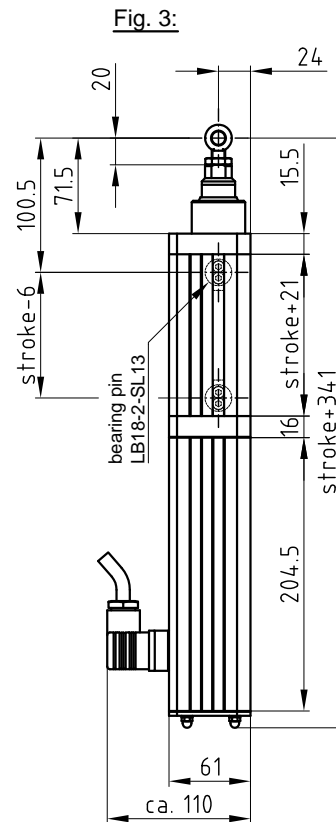
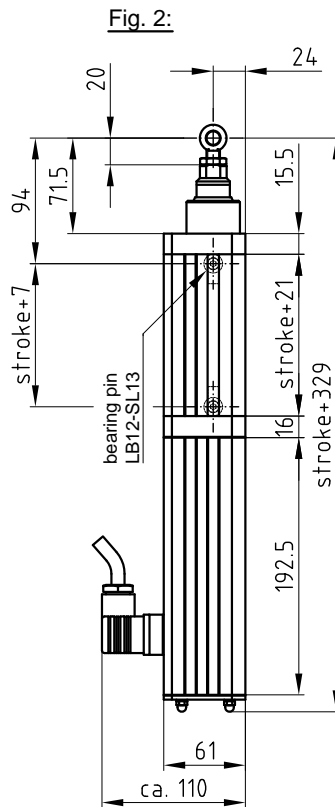
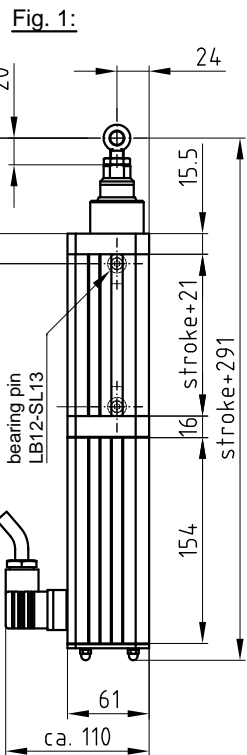
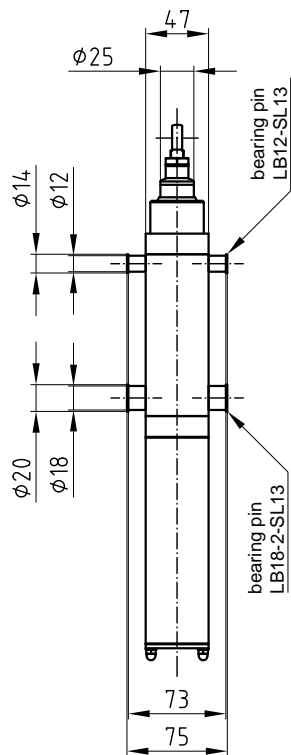
Technical data of actuator types SG10x:

Designation	SG10A	SG10B	SG10C	SG10D	SG10E	SG10F	SG10G	SG10H	SG10J	SG10K	SG10L	SG10M	SG10N	SG10P	SG10R	Unit
Pushing and pulling force (full load)	1090	710	510	400	290	740	480	340	270	190	1440	940	670	520	380	N
Theoretical pressure force during deadlock 5)	4000	2400	1800	1400	1000	2600	1600	1200	1000	600	5000	3000	2200	1600	1200	N
Current with full load	1.0															A
Speed (no load)	5.5	10.1	14.0	18.0	24.8	8.3	15.1	21.0	26.9	37.2	4.1	7.5	10.5	13.5	18.6	mm/s
Speed at full load	3.7	6.8	9.4	12.1	16.7	5.6	10.1	14.1	18.1	25.0	2.8	5.1	7.0	9.1	12.5	mm/s
Maximum stroke at full load 1)	981	1219	1436	1629	1915	2063	2564	3022	3426	4029	604	751	885	1003	1180	mm
Terminal resistance R_A at 20°C 4)	7.6															Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 2.5min.															
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 24% ³⁾ (Maximum time of operation in one direction: 2.5min)															
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)															N
Possible torque tube versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S					Ø25A, Ø25, Ø25S					mm
Standard bearing pin diameter	Ø12															mm
Dimensions (see dimensional drawing):	Figure 1															

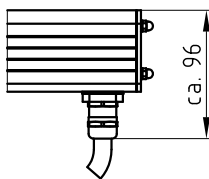
Technical data of actuator types 13x:

Designation	SG13A	SG13B	SG13C	SG13D	SG13E	SG13F	SG13G	SG13H	SG13J	SG13K	SG13L	SG13M	SG13N	SG13P	SG13R	Unit
Pushing and pulling force (full load)	1500	970	700	540	390	1020	660	470	370	270	1990	1290	930	720	520	N
Theoretical pressure force during deadlock 5)	4200	2400	1800	1400	1000	2600	1600	1200	1000	800	5200	3000	2200	1800	1200	N
Current with full load	1.3															A
Speed (no load)	5.5	10.1	14.0	18.0	24.8	8.3	15.1	21.0	27.0	37.3	4.1	7.5	10.5	13.5	18.6	mm/s
Speed at full load	3.1	5.7	7.9	10.1	14.0	4.7	8.5	11.8	15.2	21.0	2.3	4.2	5.9	7.6	10.5	mm/s
Maximum stroke at full load 1)	845	1049	1237	1402	1649	1777	2208	2602	2950	3469	520	647	762	864	1016	mm
Terminal resistance R_A at 20°C 4)	7.5															Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 1.5min.															
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 14% ³⁾ (Maximum time of operation in one direction: 1.5min)															
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)															N
Possible torque tube versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S					Ø25A, Ø25, Ø25S					mm
Standard bearing pin diameter	Ø12															mm
Dimensions (see dimensional drawing):	Figure 1															

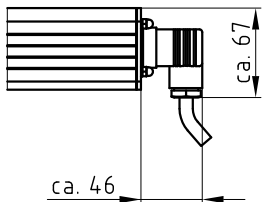
GRASL Pneumatic-Mechanik GmbH A-3454 Reidling, EuropastraÙ 1				FreimaÙtoleranz nach DIN 7168:		MaÙstab: 1:1		Werkstoff:	
				Datum		Name		ID - Nr.:	
07	Technische Daten	16.05.2018	SA	Bear.	23.09.2009	Simetzberger		Bezeichnung:	
06	Englisch, Tschechisch	20.07.2017	SA	Gepr.	25.07.2018	HA		Data sheet	
05	Standisicherheit	21.08.2012	SA	Norm				Electro-linear-actuator	
04	Zul. Umgebungstemp.	24.07.2012	SA					Type: SG08x - SG10x - SG13x	
03	Polnisch	11.08.2011	SA	Type:				Zeichnung Nr.:	
02	Tabelle	21.09.2010	SA			SG		07.021.DAT.03.07-E	
01	Tabelle	22.12.2009	SA					Blatt	
Zus.	Änderung	Datum	Name	(Urspr.)				(Ers.f.) 07.021.DAT.03.06	
								(Ers.d.)	



Option PG, option E:
(with cable screw connection MS-M20x1,5)



Option KU:
(with connector on housing bottom)



Eye bolt:

M10x40 Ø8 or Ø10: +10mm/-4mm setting range
Thread in the tube plug: M10x29

Bearing pin:

- SG08x - SG26x (Fig. 1-2): LB12-SL13 (Ø12, shaft length 13mm)
 - SG40x - SG120x (Fig. 2-5): LB18-2-SL13 (Ø18, shaft length 13mm)
- On request, the actuators SG08x - SG26x can also be supplied with LB18-2-SL13.

Tolerance	Scale	1:4	Material	
Created Simetzberger	Sheet 1/2	Format A3	Title Overview of housing dimensions Electro-linear-actuator SG	Document Style Data sheet
Approved HA	Issue Date 27.09.2017			Document State Valid
Grasl Pneumatic Mechanik GmbH				Document Number 07.021.DAT.00.03-E

Technical description:

- 1) Anodised aluminium housing with a pushrod made of aluminium or steel
- 2) Internal interference suppression according to EN55011
- 3) Disconnection in both end positions through internal limit switches
- 4) Electronic overload emergency disconnection
- 5) Electric parallel connection possible (NOTE: but no synchronized operation)
- 6) Eye bolt Ø6, Ø8 (standard) or Ø10mm
- 7) Clevis Ø6, Ø8 or Ø10mm
- 8) Light grey silicone connection cable - standard length 2,5m; other lengths on request
--> with standard version: 2x2.5qmm / cable jacket Ø approx. 9mm
--> with option E: 2x2.5qmm / 3x1.5qmm / cable jacket Ø approx. 11mm

Possible options:

- 1) Various versions with bottom mountings:
It is also possible to design actuators with bottom mountings (see data sheet 07.021.DAT.01.xx).
- 2) Various push rod suspensions:
See the data sheet 07.021.DAT.02.xx.
- 3) RAL colour.... (on request):
The actuator housing can be provided in various shades of RAL colours. For example, if option "RAL3000" is indicated, the housing will be painted in RAL3000 (red)
- 4) Option E:
Internal floating limit switch (Option E=opener) for both end positions;
load capacity 24VDC/1A (e.g. for position indication)

Ordering designation:

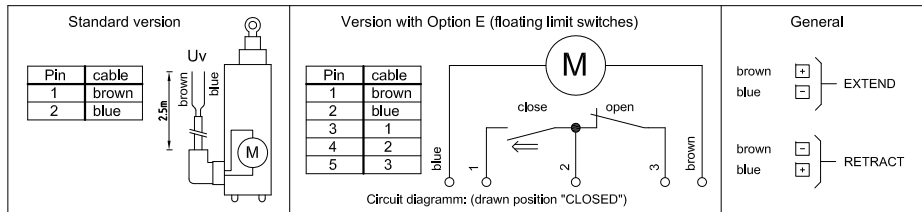
SG(typ)/(pushrod) - (stroke) - (pushrod mounting) - (cable length) - (options)

Legend:

- type: actuator type to be selected from the list
- push rod: depending on type (see table, Ø25A/Ø25 : aluminum, Ø25S: steel)
- stroke: stroke [mm]
- Push rod ending: - eye bolt (standard): bore hole of the eye bolt [mm].
- clevis: bore hole and length of slot of the clevis [mm].
- cable length: length of connection cable [m]
- protection class: protection class according to DIN EN 60 529
- options: list of all desired options

Ordering example: SG20P/25 - 750 - 8 - 2,5 - RAL 3000

Connection diagrams:



General technical data:

sealing version	standard	permissible ambient temperature	-25°C - +60°C
rated voltage	24VDC	max. permissible temp. to EN 12101-2 attachment G	300° - 30min
no load current	0,8A	protection type according to DIN EN 60 529	IP 54

- 1) The maximum stroke with full load is the stroke, that an actuator is able to extend with full load without spindle permanently bent. For greater strokes a pushing force must be reduced. Corresponding force-stroke diagrams can be supplied by us on request.
- 2) The stability is the maximum pulling force that may occur on the retracted push rod. (locking force = holding force)
- 3) Either an actuator is being extended under a load and supporting load, while being retracted or retracting under a load and supporting, while being extended.
- 4) Starting current I_A [A] = supply voltage U_V [V] / terminal resistance R_A [Ω]
When determining U_V , observe the resistances (internal resistance voltage source, line resistances, ...) to the actuator connection cable.
- 5) At $U_V=24V$.

Diese Zeichnung ist Eigentum der
Fa. Grasl GmbH A-3454 Reidling, Europastraße 1
Die Weiterverwendung oder Vervielfältigung ohne unser schriftliches Einverständnis ist verboten!

Technical data of actuator types SG16x:

Designation	SG16A	SG16B	SG16C	SG16D	SG16E	SG16F	SG16G	SG16H	SG16J	SG16L	SG16M	SG16N	SG16P	SG16R	Unit
Pushing and pulling force (full load)	1530	990	710	560	400	1040	670	480	380	2030	1320	950	740	530	N
Theoretical pressure force during deadlock 5)	9200	5800	4200	3200	2400	6000	3800	2800	2200	11400	7200	5200	4000	3000	N
Current with full load	1.6														
Speed (no load)	6.2	11.2	15.6	20.0	27.7	9.2	16.8	23.4	30.0	4.6	8.4	11.7	15.0	20.8	mm/s
Speed at full load	5.1	9.3	12.9	16.6	23.0	7.7	14.0	19.4	24.9	3.8	7.0	9.7	12.5	17.2	mm/s
Maximum stroke at full load 1)	842	1046	1232	1397	1643	1770	2200	2592	2940	518	644	759	861	1012	mm
Terminal resistance R_A at 20°C 4)	3.3														
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 4min.														
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 21% 3) (Maximum time of operation in one direction: 4min)														
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)														
Possible pushrod versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S			Ø25A, Ø25, Ø25S						mm
Standard bearing pin diameter	Ø12														
Dimensions (see dimensional drawing):	Figure 2	Figure 1			Figure 2	Figure 1			Figure 2	Figure 1					

Technical data of actuator types SG20x:

Designation	SG20A	SG20B	SG20C	SG20D	SG20E	SG20F	SG20G	SG20H	SG20J	SG20L	SG20M	SG20N	SG20P	SG20R	Unit
Pushing and pulling force (full load)	2000	1300	930	730	530	1360	880	630	490	2660	1720	1240	960	700	N
Theoretical pressure force during deadlock 5)	9400	5800	4200	3400	2400	6000	3800	2800	2200	11800	7400	5400	4200	3000	N
Current with full load	2.0														
Speed (no load)	6.2	11.2	15.6	20.0	27.7	9.2	16.8	23.4	30.1	4.6	8.4	11.7	15.0	20.8	mm/s
Speed at full load	4.8	8.8	12.2	15.7	21.7	7.2	13.2	18.3	23.6	3.6	6.6	9.2	11.8	16.3	mm/s
Maximum stroke at full load 1)	739	918	1082	1227	1443	1555	1932	2277	2582	455	566	667	756	889	mm
Terminal resistance R_A at 20°C 4)	3.2														
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 2.5min.														
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 13% 3) (Maximum time of operation in one direction: 2.5min)														
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)														
Possible pushrod versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S			Ø25A, Ø25, Ø25S						mm
Standard bearing pin diameter	Ø12														
Dimensions (see dimensional drawing):	Figure 2	Figure 1			Figure 2	Figure 1			Figure 2	Figure 1					

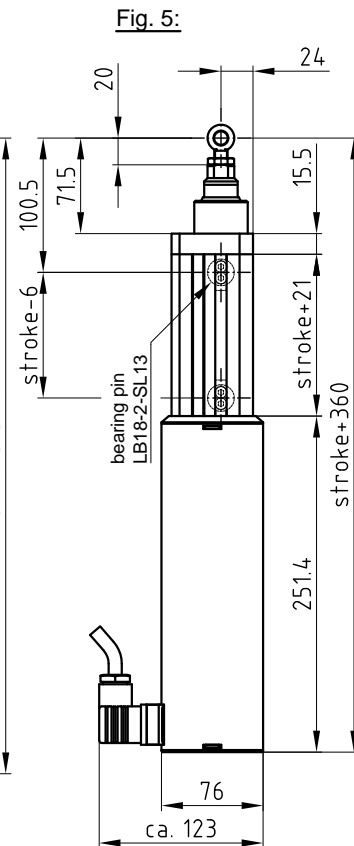
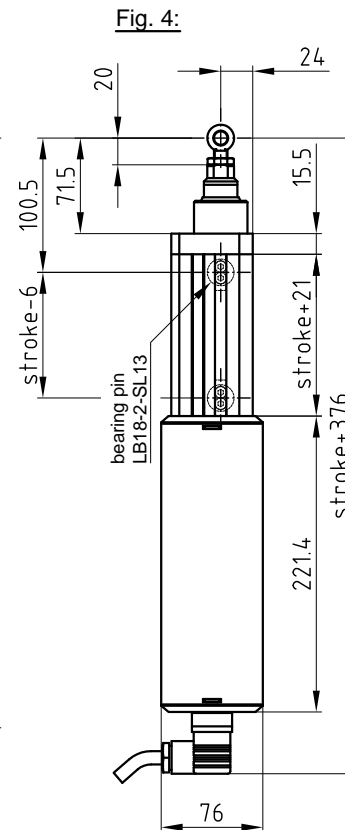
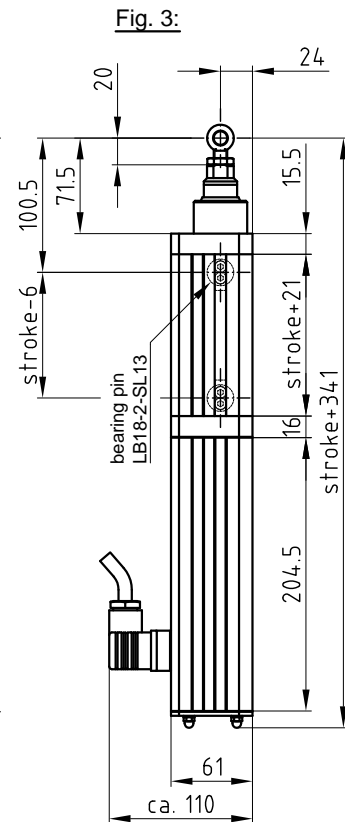
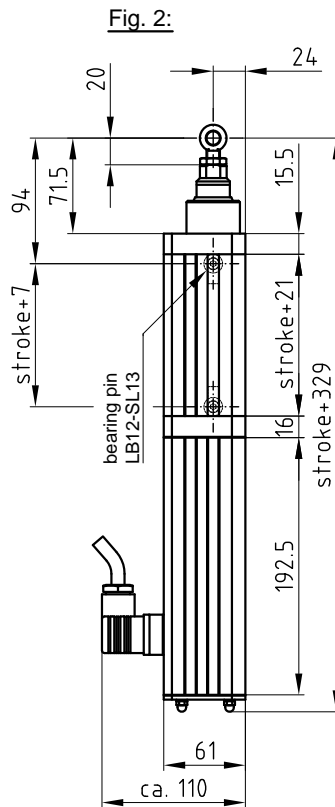
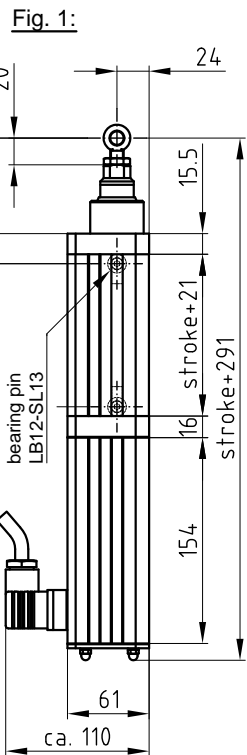
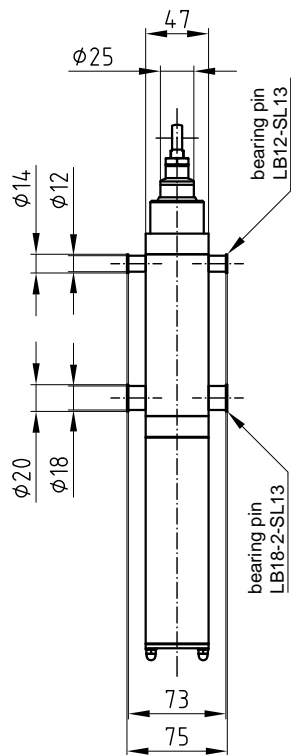
Technical data of actuator types SG26x:

Designation	SG26A	SG26B	SG26C	SG26D	SG26E	SG26F	SG26G	SG26H	SG26J	SG26M	SG26N	SG26P	SG26R	Unit	
Pushing and pulling force (full load)	2710	1760	1260	980	710	1840	1190	860	670	2330	1680	1300	940	N	
Theoretical pressure force during deadlock 5)	9600	6000	4400	3400	2400	6200	4000	2800	2200	7600	5400	4200	3000	N	
Current with full load	2.6														
Speed (no load)	6.2	11.2	15.6	20.1	27.7	9.2	16.8	23.4	30.1	4.6	8.4	11.7	15.0	20.8	mm/s
Speed at full load	4.4	8.1	11.2	14.4	19.9	6.6	12.1	16.8	21.6	6.1	8.4	10.8	14.9	mm/s	
Maximum stroke at full load 1)	638	793	934	1059	1245	1342	1667	1965	2228	488	575	653	767	mm	
Terminal resistance R_A at 20°C 4)	3.1														
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 1.5min.														
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 8% 3) (Maximum time of operation in one direction: 1.5min)														
Stability (locking force) 2)	3200 (with standard bearing pins LB12-SL13) / 3500 (with bearing pins LB18-2-SL13)														
Possible pushrod versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S			Ø25A, Ø25, Ø25S						mm
Standard bearing pin diameter	Ø12														
Dimensions (see dimensional drawing):	Figure 2	Figure 1			Figure 2	Figure 1			Figure 1						

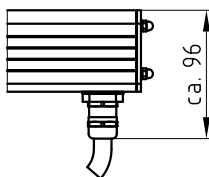
GRASL Pneumatic-Mechanik GmbH A-3454 Reidling, Europastraße 1		Freimastoleranz nach DIN 7168:		Maßstab: 1:1		Werkstoff:	
				ID - Nr.:			
				Datum		Name	
07	Technische Daten	16.05.2018	SA	Bear.	23.09.2009	Simefzberger	
06	Englisch, Tschechisch	20.07.2017	SA	Gepr.	25.07.2018	HA	
05	Sandsicherheit	21.08.2012	SA	Norm			
04	Zul. Umgebungstemp.	24.07.2012	SA				
03	Polnisch	11.08.2011	SA	Type:			
02	Tabelle	21.09.2010	SA				
01	Tabelle	22.12.2009	SA				
Zus.	Änderung	Datum	Name	(Urspr.)		(Ers.f.)	07.021.DAT.04.06
				SG		Blatt	
						07.021.DAT.04.07-E	
						(Ers.d.)	

Data sheet
Electro-linear-actuator
Type: SG16x - SG20x - SG26x

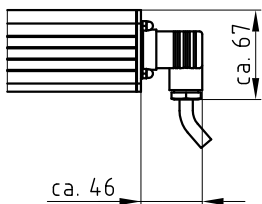
Zeichnung Nr.:
07.021.DAT.04.07-E



Option PG, option E:
(with cable screw connection MS-M20x1,5)



Option KU:
(with connector on housing bottom)



Eye bolt:

M10x40 Ø8 or Ø10: +10mm/-4mm setting range
Thread in the tube plug: M10x29

Bearing pin:

- SG08x - SG26x (Fig. 1-2): LB12-SL13 (Ø12, shaft length 13mm)
 - SG40x - SG120x (Fig. 2-5): LB18-2-SL13 (Ø18, shaft length 13mm)
- On request, the actuators SG08x - SG26x can also be supplied with LB18-2-SL13.

Tolerance	Scale	1:4	Material	
Created Simetzberger	Sheet 1/2	Format A3	Title Overview of housing dimensions Electro-linear-actuator SG	Document Style Data sheet
Approved HA	Issue Date 27.09.2017			Document State Valid
Grasl Pneumatic Mechanik GmbH				Document Number 07.021.DAT.00.03-E

Technical description:

- 1) Anodised aluminium housing with a pushrod made of aluminium or steel
- 2) Internal interference suppression according to EN55011
- 3) Disconnection in both end positions through internal limit switches
- 4) Electronic overload emergency disconnection
- 5) Electric parallel connection possible (NOTE: but no synchronized operation)
- 6) Eye bolt Ø6, Ø8 (standard) or Ø10mm
- 7) Clevis Ø6, Ø8 or Ø10mm
- 8) Light grey silicone connection cable - standard length 2,5m; other lengths on request
--> with standard version: 2x2.5qmm / cable jacket Ø approx. 9mm
--> with option E: 2x2.5qmm / 3x1.5qmm / cable jacket Ø approx. 11mm

Possible options:

- 1) Various versions with bottom mountings:
It is also possible to design actuators with bottom mountings (see data sheet 07.021.DAT.01.xx).
- 2) Various push rod suspensions:
See the data sheet 07.021.DAT.02.xx.
- 3) RAL colour.... (on request):
The actuator housing can be provided in various shades of RAL colours. For example, if option "RAL3000" is indicated, the housing will be painted in RAL3000 (red)
- 4) Option E:
Internal floating limit switch (Option E=opener) for both end positions;
load capacity 24VDC/1A (e.g. for position indication)

Ordering designation:

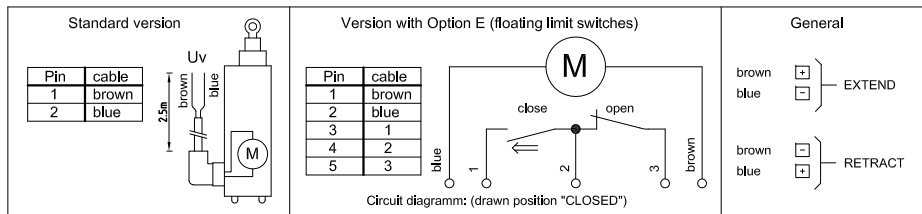
SG(typ)/(pushrod) - (stroke) - (pushrod mounting) - (cable length) - (options)

Legend:

- type: actuator type to be selected from the list
- push rod: depending on type (see table, Ø25A/Ø25 : aluminum, Ø25S: steel)
- stroke: stroke [mm]
- Push rod ending: - eye bolt (standard): bore hole of the eye bolt [mm].
- clevis: bore hole and length of slot of the clevis [mm].
- cable length: length of connection cable [m]
- protection class: protection class according to DIN EN 60 529
- options: list of all desired options

Ordering example: SG40P/25 - 750 - 8 - 2,5 - RAL 3000

Connection diagrams:



General technical data:

sealing version	standard	permissible ambient temperature	-25°C - +60°C
rated voltage	24VDC	max. permissible temp. to EN 12101-2 attachment G	300° - 30min
no load current	0,8A	protection type according to DIN EN 60 529	IP 54

- 1) The maximum stroke with full load is the stroke, that an actuator is able to extend with full load without spindle permanently bended. For greater strokes a pushing force must be reduced. Corresponding force-stroke diagrams can be supplied by us on request.
- 2) The stability is the maximum pulling force that may occur on the retracted push rod. (locking force = holding force)
- 3) Either an actuator is being extended under a load and supporting load, while being retracted or retracting under a load and supporting, while being extended.
- 4) Starting current I_s [A] = supply voltage U_s [V] / terminal resistance R_s [Ω]
When determining U_s, observe the resistances (internal resistance voltage source, line resistances, ...) to the actuator connection cable.
- 5) At U_s=24V.

Diese Zeichnung ist Eigentum der
Fa. Grasl GmbH A-3454 Reidling, Europastraße 1
Die Weiterverwendung oder Vervielfältigung ohne unser schriftliches Einverständnis ist verboten!

Technical data of actuator types SG40x:

Designation	SG40A	SG40B	SG40C	SG40D	SG40E	SG40F	SG40G	SG40H	SG40J	SG40L	SG40M	SG40N	SG40P	SG40R	SG40S	SG40T	SG40U	SG40V	SG40W	Unit	
Pushing and pulling force (full load)	3850	2490	1800	1400	1010	2610	1690	1220	950	4850	3330	2600	1660	1300	3290	2250	1760	1130	880	N	
Theoretical pressure force during deadlock 5)	24600	15000	10800	8400	6200	16600	10200	7400	5800	27000	19200	15000	9600	7600	18200	13000	10200	6600	5200	N	
Current with full load	4,0																				A
Speed (no load)	6.7	12.2	17.0	21.9	30.2	10.1	18.4	25.5	32.8	6.1	9.6	12.2	19.1	24.5	9.2	14.3	18.4	28.7	36.7	mm/s	
Speed at full load	5.3	9.7	13.5	17.4	24.1	8.0	14.6	20.3	26.1	4.9	7.6	9.7	15.2	19.5	7.3	11.4	14.6	22.8	29.2	mm/s	
Maximum stroke at full load 1)	529	657	774	878	1032	1112	1382	1629	1847	471	569	644	805	910	991	1197	1354	1693	1915	mm	
Terminal resistance R _A at 20°C 4)	1.1																				Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 4min.																				
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 20% 3) (Maximum time of operation in one direction: 4min)																				
Stability (locking force) 2)	6400 (with standard bearing pins LB18-2-SL13)																				N
Possible pushrod versions	Ø25A, Ø25, Ø25S					Ø25, Ø25S					Ø25A, Ø25, Ø25S					Ø25, Ø25S					mm
Standard bearing pin diameter	Ø18																				mm
Dimensions (see dimensional drawing!)	Figure 2	Figure 1				Figure 2	Figure 1				Figure 3	Figure 2				Figure 3	Figure 2				

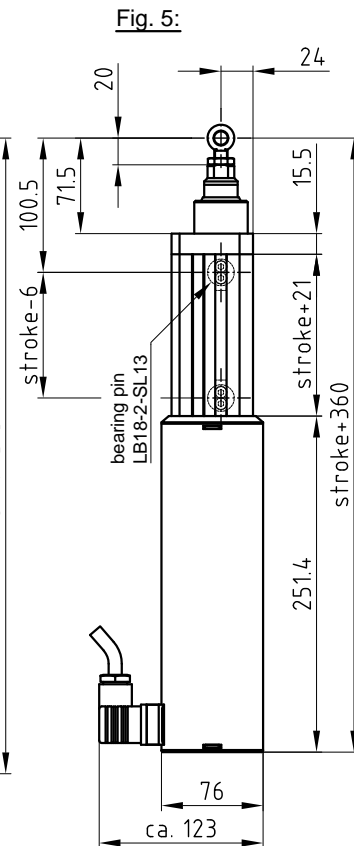
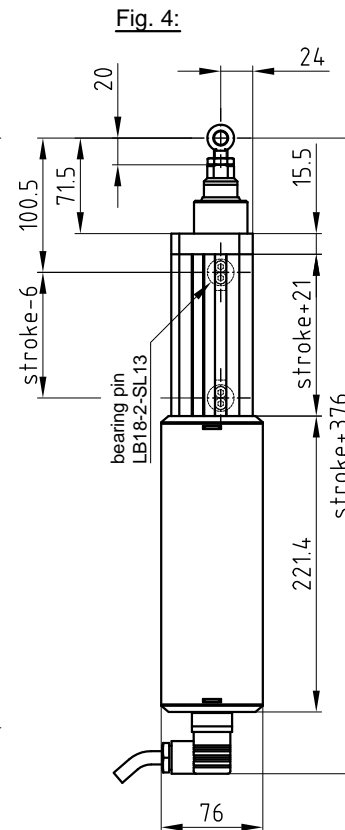
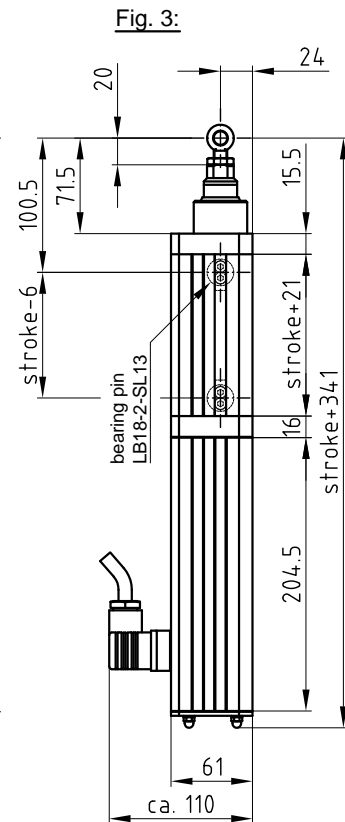
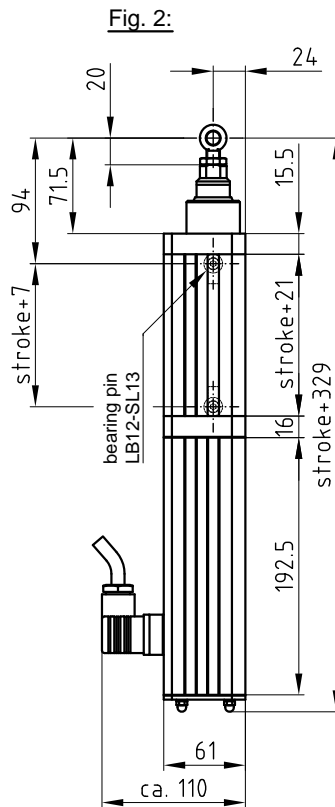
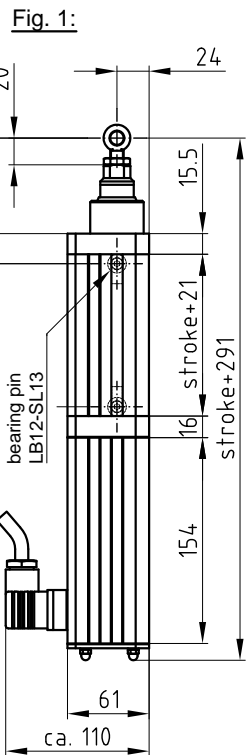
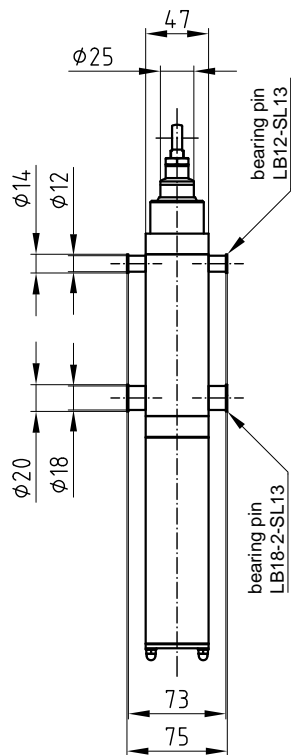
Technical data of actuator types SG60x:

Designation	SG60D	SG60E	SG60F	SG60J	SG60M	SG60N	SG60P	SG60R	SG60S	SG60T	SG60U	SG60V	SG60W	Unit
Pushing and pulling force (full load)	2220	1600	4140	1500	5280	4130	2640	2060	5220	3580	2800	1790	1400	N
Theoretical pressure force during deadlock 5)	8800	6400	17400	6000	20200	15800	10200	8000	19200	13600	10600	6800	5400	N
Current with full load	6,0													A
Speed (no load)	21.9	30.3	10.1	32.8	9.6	12.3	19.2	24.5	9.2	14.4	18.4	28.7	36.8	mm/s
Speed at full load	15.2	21.0	7.0	22.8	6.7	8.5	13.3	17.0	6.4	10.0	12.8	20.0	25.6	mm/s
Maximum stroke at full load 1)	702	826	890	1478	455	515	644	728	793	958	1083	1354	1532	mm
Terminal resistance R _A at 20°C 4)	1.1													Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 2min.													
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 10% 3) (Maximum time of operation in one direction: 2min)													
Stability (locking force) 2)	6400 (with standard bearing pins LB18-2-SL13)													N
Possible pushrod versions	Ø25A, Ø25, Ø25S			Ø25, Ø25S			Ø25A, Ø25, Ø25S			Ø25, Ø25S				mm
Standard bearing pin diameter	Ø18													mm
Dimensions (see dimensional drawing!)	Figure 1	Figure 2	Figure 1	Figure 2			Figure 3	Figure 2						

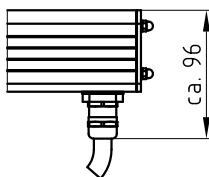
Technical data of actuator types SG80x:

Designation	SG80E	SG80N	SG80P	SG80R	SG80T	SG80U	SG80V	SG80W	Unit
Pushing and pulling force (full load)	2200	5660	3620	2830	4900	3830	2450	1920	N
Theoretical pressure force during deadlock 5)	6600	16200	10400	8200	14000	11000	7000	5600	N
Current with full load	8,0								A
Speed (no load)	30.3	12.3	19.2	24.5	14.4	18.4	28.7	36.8	mm/s
Speed at full load	18.1	7.3	11.5	14.7	8.6	11.0	17.2	22.0	mm/s
Maximum stroke at full load 1)	708	442	552	625	821	929	1161	1314	mm
Terminal resistance R _A at 20°C 4)	1.1								Ω
Operating mode for peak load according DIN VDE 0530 part 1 (with 25°C ambient temperature)	S2 1min.								
Operating mode for continuous load according DIN VDE 0530 part 1 (with 40°C ambient temperature)	S3 5% 3) (Maximum time of operation in one direction: 1min)								
Stability (locking force) 2)	6400 (with standard bearing pins LB18-2-SL13)								N
Possible pushrod versions	Ø25A, Ø25, Ø25S				Ø25, Ø25S				mm
Standard bearing pin diameter	Ø18								mm
Dimensions (see dimensional drawing!)	Figure 1				Figure 2				

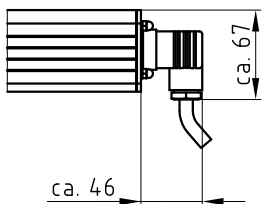
GRASL Pneumatic-Mechanik GmbH A-3454 Reidling, Europastraße 1		Freiabstoleranz nach DIN 7168:		Maßstab: 1:1		Werkstoff:	
		Datum		ID - Nr.:			
07	Technische Daten	16.05.2018	SA	Bear.	23.09.2009	Bezeichnung:	
06	Engl., Tsche., SG40RL	20.07.2017	SA	Gepr.	25.07.2018	Data sheet	
05	Zul. Umgebungstemp.	24.07.2012	SA	Norm		Electro-linear-actuator	
04	SG40RL erwehert	25.10.2011	GS			Type: SG40x - SG60x - SG80x	
03	Polnisch	11.08.2011	SA	Type:		Zeichnung Nr.:	
02	Tabelle	21.09.2010	SA			07.021.DAT.05.07-E	
01	Tabelle	22.12.2009	SA			Blatt	
Zus.	Änderung	Datum	Name	(Urspr.)	(Ers.f.)	07.021.DAT.05.06	(Ers.d.)



Option PG, option E:
(with cable screw connection MS-M20x1,5)



Option KU:
(with connector on housing bottom)



Eye bolt:

M10x40 Ø8 or Ø10: +10mm/-4mm setting range
Thread in the tube plug: M10x29

Bearing pin:

- SG08x - SG26x (Fig. 1-2): LB12-SL13 (Ø12, shaft length 13mm)
 - SG40x - SG120x (Fig. 2-5): LB18-2-SL13 (Ø18, shaft length 13mm)
- On request, the actuators SG08x - SG26x can also be supplied with LB18-2-SL13.

Tolerance	Scale	1:4	Material
Created Simetzberger	Sheet 1/2	Format A3	Title Overview of housing dimensions Electro-linear-actuator SG
Approved HA	Issue Date 27.09.2017		
Grasl Pneumatic Mechanik GmbH			
			Document Style Data sheet
			Document State Valid
			Document Number 07.021.DAT.00.03-E