EEL-S1

Plug-and-Play - EEL-S1

The S1 controller offers a simple plug & play solution for our actuators for individual, parallel and synchronous operation. The controllers are pre-configurated and adapted to the respective actuator. So in order to start operation, the actuator only has to be connected with the controller. It is possible to control up to 3 actuators in parallel.

Besides that, the controller offers the possibility to connect external sensors such as a remote control or anti-squeeze protection bar. A cascading of up to 4 S1 controllers is possible, too.

The controllers are available with 120V and 220V with which 24V-actuators can be controlled. Different handsets complete this range of products.

Technical data

- Flat, compact design
- Highly efficient switching power supply
- For up to 3 motors. Max. 8A per channel, in total max. 16A
- Output voltage: 24V
- Support of hall sensors
- Up to 2 motor categories (operation only with handset EEL-LDH-ST2)
- Cascading of up to 4 S1 controllers
- 0.3 watt Standby-consumption (0.1 watt optional)
- Dimensions: 264 x 103 x 37 mm
- Operating temperature: +0 °C - +30 °C
- Protection rating: IP20
- Controllers for EU power supply voltage (230V / 50Hz) and U.S. power supply voltage (120V / 60Hz) available

S1 Handsets

EEL-LDH-Basic-DN

- Up/Down
- Compact size 50.5x57.7x24.4mm
- weight: 35 gr.

EEL-LDH-Basic-IL

- Up/Down
- Compact size 30.4x67.8x20.5mm
- weight: 39 gr.

EEL-LDH-IL

- Up/Down
- 2 memory positions
- 4-digit display for inch or cm
- 42x95.4x17.3 mm
- weight: 61 gr.

EEL-LDH-Down

- Up/Down
- 4 memory positions
- 4-digit display for inch or cm
- 150.3x183.6x38.8 mm
- weight: 171 gr.

EEL-LDH-ST2

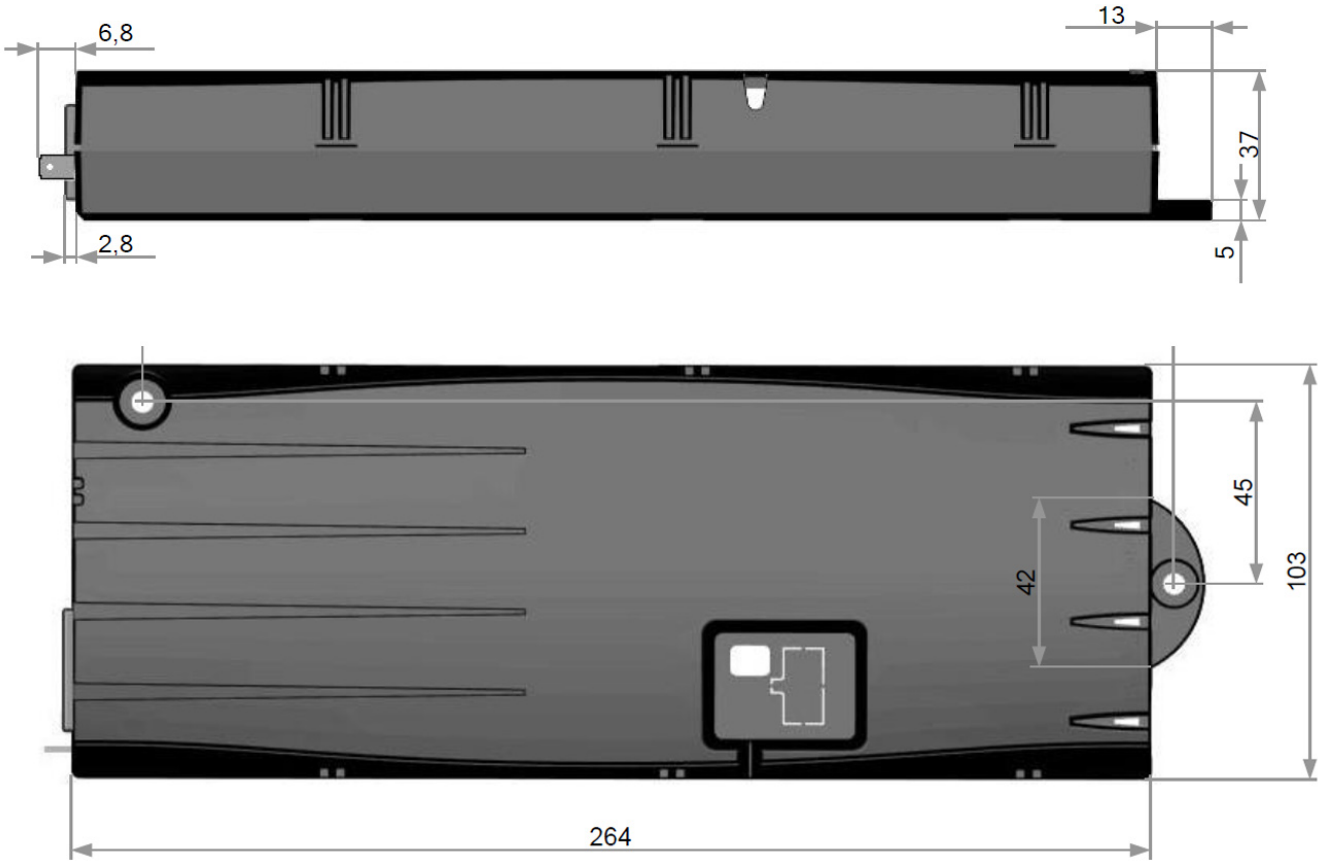
- Up/Down
- Up to 2 motor groups
- 4 memory positions
- 3-digit display for inch or cm
- 119x129x9.6 mm
- weight: 130 gr.

S1 Connections

HS Handset
1 Motor 1
2 Motor 2
3 Motor 3
K For external sensors, anti-squeeze protection bar and cascading

NB Power plug
E Grounding

Dimensions control box:



The flyer is subject to technical alterations and printing mistakes.

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01/2018

EEL-S2-1

EEL-S2-1
Control and protection of *easyE-line* actuators

Features:

- Adjustable start ramp
- Adjustable stop ramp
- Adjustable current limit
- Continuous-mode, impulse-mode
- High momentary load capacity
- Easy interfacing to PLC etc.
- Connectors and terminals
- DIN-rail fittable
- Status LED

Technical Data

- Supply: 12-24 VDC (filtered max ripple <30%@full load)
- Over voltage protection: 40 V
- Idle current Approx. 15 mA
- Driving current: 10 A continuous, 16 A with duty cycle 50% Max 16 A on duty 2 min
- Current limit: 0,5... 16 A
- Current trip delay: 20 ms
- Start delay: 5 ms
- Voltage loss: 0,5 V (Im = 4A)
- PWM frequency: 2 kHz
- Ramps: 0,1 ... 2,5 s
- Digital inputs:
  - 'High' @ Uin 4 V -> supply voltage,
  - 'Low' @ Uin 0 V -> 1 V
- Operating temp.: -20° to +70 °C
- Weight: 36g
- Dimensions: 73 x 43 x 25mm (LxWxH)

The EEL-S2-1 is developed for controlled ON-OFF driving and direction change of the easyE-line actuators. EEL-S2-1 has advanced current limit features. It limits the actuator current in start-up, braking and jam-situations and in that way protects the motor and the mechanics. EEL-S2-1 also has a fault in- and output which indicates error/over-current status and can be used to stop the actuator (for example if an emergency-stop switch is used). The EEL-S2-1 works in conjunction with actuator without hall only.

The start and stop ramp times are individually adjustable to suit each application. In other words the motor voltage is controlled to give a preferred smooth start and stop. When the EEL-S2-1 controller is without power, the motor is dynamically braked with so called short-circuit braking, i.e. the motor poles are connected together. The reverse and forward inputs can be set to work with negative or positive voltage by moving a jumper.

The EEL-S2-1 has a 'trip' feature that cuts the motor voltage if the current limit value is exceeded (after trip delay of 2ms). After trip the motor can only be started in the opposite direction. Additionally the EEL-S2-1 provides 'kick-start' which means 100ms at full speed (100%PWM). Current limit during kickstart is up to 55A.

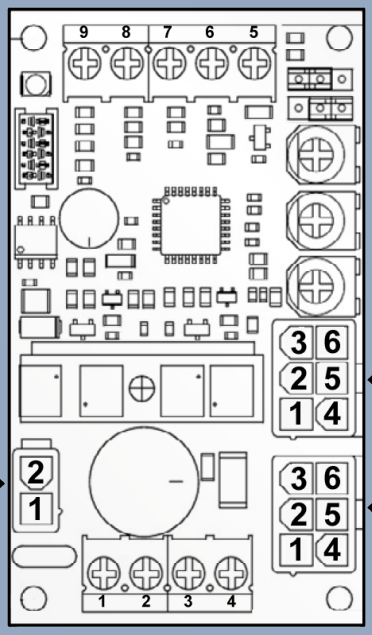
If the actuator is stopped without going into trip mode, then the EEL-S2-1 controller will allow 50% higher current from start and until 500ms after ending start ramp.

Wiring S2-1

Molex 2-pin connector
for power supply

Pin 2: 12/24 VDC
Pin 1: GND

Note: If the power consumption is higher than 8A continuously, screw terminals must be used due to the size of leads in layout. Pin 1 is Supply GND, Pin 2 is Supply + (12VDC/24VDC).



Molex 6-pin connectors
with same connection for both actuator and control.

House type for cable: 5557
Terminal type: 5556

Pin 1: Actuator +
Pin 2: Control: Common (GND)
Pin 3: Control: Rev/In
Pin 4: Actuator -
Pin 5: Fault in/out
Pin 6: Control: Fwd/Out

Note: If actuators with hall sensors are used with these connectors, the 4 hall wires must be disconnected

Screw Terminals

1 Supply GND
2 Supply + (12/24 VDC) fuse required
3 Actuator –
4 Actuator +
5 +5 V output for control-use max. 10 mA load
6 Fault in- and output
7 Reverse (Rev/In) signal input (0,5 mA)
8 Forward (Fwd/Out) signal input (0,5mA)
7+8 Used to activate the actuator reverse and forward. Please refer to description of ‘Control mode’ on page 3
9 GND for control-use (not to be used as supply input)

General

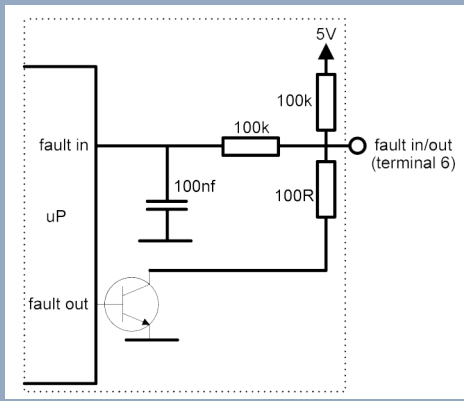
LED signals: Fast blink: Current trip, Four blinks: Over-voltage, Solid light: Overtemp

Current limit during start ramp and 500ms thereafter is current limit plus 50%.

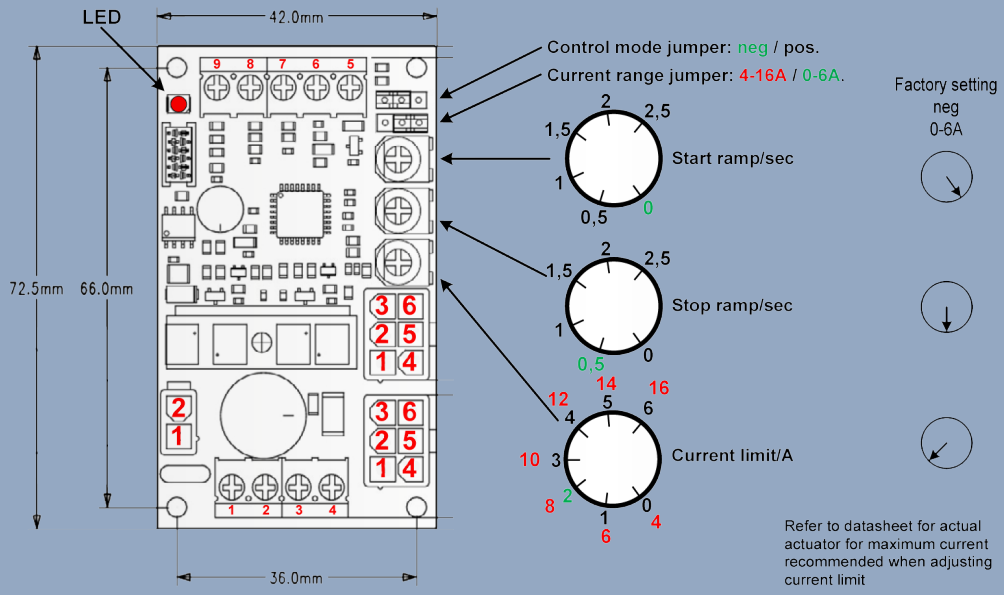
After trip the motor can only be started in the opposite direction. Additionally the S2-1 after trip provides ‘kick-start’, which means 250ms at full speed (100%PWM). Current limit during kick-start is up to 55A.

The fault terminal is both input and output (see circuit diagram). During normal operation the signal is pulled high to 5 V on the S2-1 board in series with a 100k re-sistor. When a fault occurs the fault terminal changes to low voltage (GND via 100R resistor).

Circuit diagram



Settings and mechanical dimensions



Control mode

When jumper is put in mode ‘neg’ (left hand side) then a negative (GND) signal is put on terminal 7 and 8 to run motor.

When using ‘neg’ mode, then terminal 9 can be used as the negative supply.

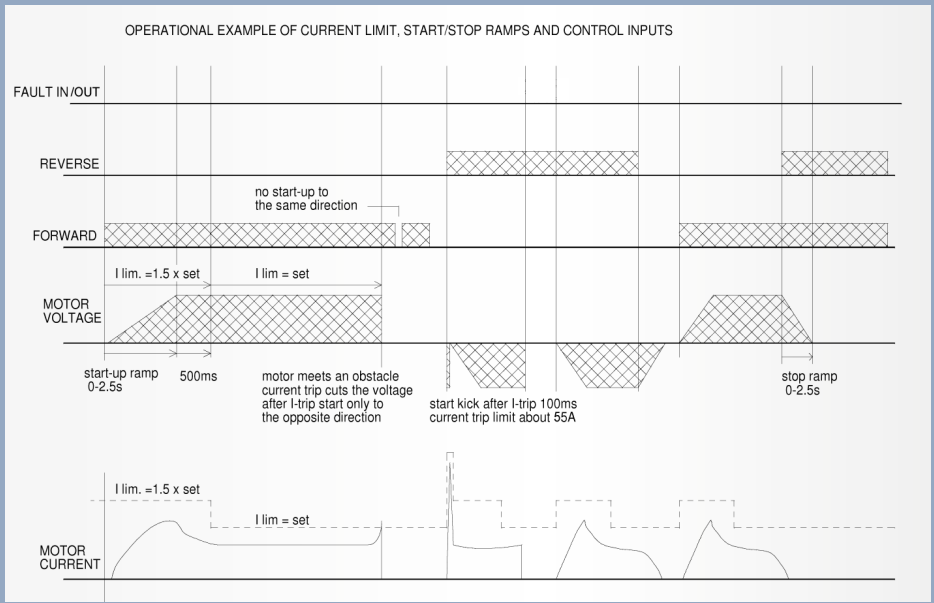
When jumper is put in mode ‘pos’ (jumper in right side) then a positive (> 4 V) signal is put on terminal 7 and 8 to run motor.

When using ‘pos’ mode, then terminal 5 can be used as the positive supply.

NOTE: When using the connectors for remote control, then the jumper MUST be in ‘neg’ mode (left side).

Input current for reverse & forward control is 0.5mA.

Timing diagram



EEL-S2-1-A

(board alone)
73 x 43 x 25 mm (L x W x H)

EEL-S2-1-B

(box version) weight: 64g
102 x 73 x 47 mm (L x W x H)

EEL-S2-1-D

(DIN rail version) weight: 66g
90 x 46 x 56 mm (L x W x H)

Box-version is not for use with Molex Minifit, only open ends.

Warnings and recommendations

- If S2-1 goes into “trip” (overcurrent), it is only possible to run actuator in opposite direction.
- Please adjust the max. current to be 10% higher than maximum current during running the actuator.
- This gives the best conditions for long motor and actuator mechanical and electrical lifetime.
- It is very important to ensure that the power supply for the controller is capable of supplying sufficient current – otherwise the controller and the actuator may be damaged.
- Doublecheck correct polarity of power supply. If wrong connected, the S2-1 will be damaged.
- Attention! Driver has no fuse in it. Use external fuse according to application (2 -> 16A slow).
- Bansbach does not have any responsibility over the possible errors in this data sheet. Specifications are to be changed without notice.

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02/2019

EEL-S2-2

EEL-S2-2
Advanced Actuator Controller

Features:

- Precise position control from
- analog voltage input
- Adjustable start ramp
- Adjustable stop ramp
- Settable current limit
- High efficiency
- High momentary load capacity
- DIN-rail base fittable
- “Position reached” - signal

Technical Data

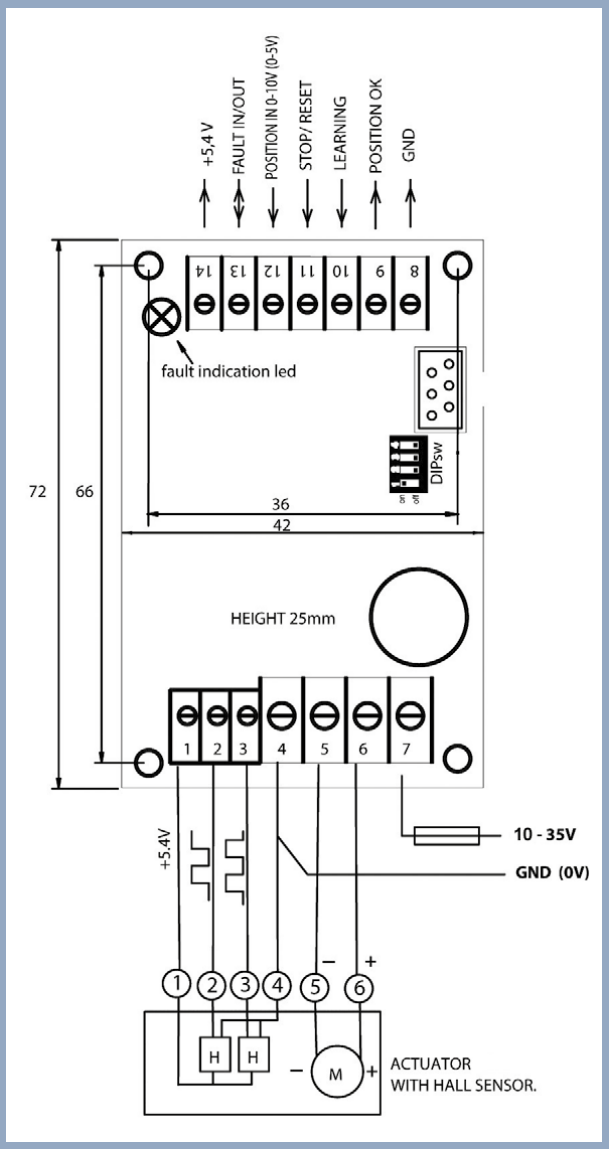
- Supply voltage: 12/24VDC
- Ripple: Less than 20%
- Actuator current continuous max: 15A (Ta<60°C)
- Actuator current max: 20A (short time)
- Current limit adj.: 0.1-20A
- Overheat limit: 100°C
- PWM frequency: 2kHz
- Hall input freq.: Max 1kHz
- Input control logic (pos.):
  - High=4-30V,
  - Low=0-1V or open
- Control input impedances typ.: 30kohm
- Motor and supply connectors: 2.5mm wires max
- Control connectors: 1mm wires max
- Dimensions: 73x43x25mm (LxWxH)
- Weight: 63g
- Operating temp: -20° to +70°C
- Idle current: 45mA

The EEL-S2-2 actuator controller provides advanced positioning and control of actuators through easy and flexible integration with the application. The controller is designed to work with Bansbach easyE-line actuators in applications where positioning is required. The EEL-S2-2 has adjustable start and stop ramps, which make smooth starts and stops possible. The EEL-S2-2 works in conjunction with actuators with hall only.

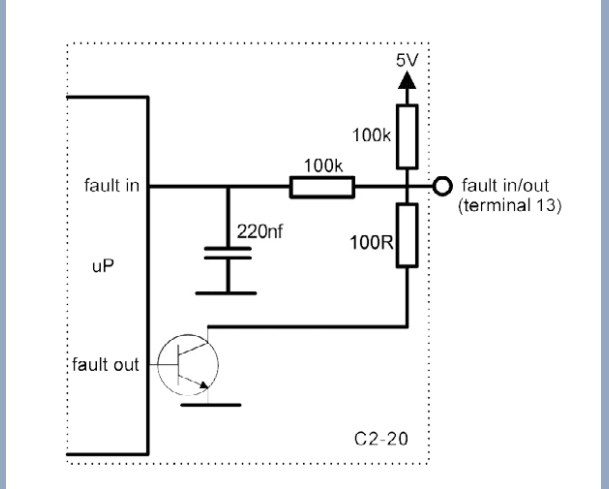
Adjustable current limits in both directions protect the motor against overcurrent. In learning mode the number of hall pulses in a full stroke of the actuator is counted which enables accuratepositioning during normal operation.

The position of the actuator is controlled by a DC voltage between 0-5 or 0-10 Volts to the S2-2. Adjustments and parameter settings like current limit value, ramp times, speed etc. are set with S2-PROG interface unit or S2-USB “dongle” connected to a PC.

Wiring S2-2



Circuit diagram



Screw Terminals

1 Supply for hall sensors (+5V output)

2 Hall channel A

3 Hall channel B

4 GND (0V) and gnd for hall

5 Actuator –

6 Actuator +

7 Supply
12/24 VDC (fuse required)

8 GND (0V)

9 Position OK
Digital output 5V through 1kO when wanted position is reached and low during travel.

Note: If “stop ramp” is very long, then POSITION OK signal can be difficult to reach, since the motor only gets very low power to reach within the “dead zone”

10 Learning
Digital input (>4V and max supply voltage) starts “learning”. Rin 47kO

11 Stop/Reset
Digital input (>4V and max supply voltage) Stops the motor and resets any fault. Rin 47kO

12 Pos. Set
Analog input
DIPsw 1 on=0-10,8V
DIPsw 1 off=0-5,4V
DIPsw 2-4 not used, must be set to off
Rin 30kO

13 Fault IN/OUT
NPN open collector max 100mA can be connected to other S2-2 modules, thereby all modules connected will stop if one module sends a FAULT signal. If wire length is more than 1 meter, a 10kO pull-up resistor connected to supply is recommended. Diagram in FIG 2

Pin13/	Vcc=12VDC	Vcc=24VDC
No fault	9,3V	15,3V
Fault	0V	0V

14 +5,4V output, max 10mA

Wiring and Settings

First run the learning cycle and then do the settings with serial interface unit “S2-PROG” or PC.
Default values in ( )

1/15	**Speed:** 35 - 100% <=> 35-100 (100)	*limits the maximum speed.*
2/15	**Learning speed:** 35 - 100% <=> 35-100 (50)	*sets the learning cycle speed.*
3/15 **4/15**	**I-limit “forward”:** 0,1 - 20,0A <=> 1-200 (20) **I-limit “reverse”:** 0,1 - 20,0A <=> 1-200 (20) Notice! Current limits are 1.5 times higher during start ramp and 1 sec. thereafter	*are individual for reverse and forward directions. Refer to datasheet for actual actuator for maximum recommended current shen adjusting*
5/15	**I-trip enable:** 0/1 <=> off/on (1)	*enables the trip function, so that motor will be shut down when the set I-limit is exceeded. Motor has to be started in opposite directionafter trip.*
6/15	**I-trip delay:** 0 - 255ms <=> 0 - 255 (5)	*defines the reaction time for trip.*
7/15	**Load compensation:** 0 -255 <=> 0 - 255 (0)	*increases the torque at low speed. Note that over-compensation will cause oscillation and twiching of the motor.*
8/15	**Pulse lost timeout:** 1 - 5s <=> 1 - 5 (2)	*stops motor after the set time without pulses.*
9/15	**Start value:** 0 - 50% <=> 0 - 50 (30)	*is a voltage level for start (% of full), this ensures that the motor gets an adequate voltage to start properly, but note that too high start level will cause motor vibration (FIG. 3).*
10/15	**Hour/Start count reset:** 0 - 1, reset when set to 1	*makes possible to set the hour/start counter to zero.*
11/15	**Stop ramp:** 0,0 - 20,0% <=> 0 - 200 (50)	*is proportional value of the full stroke. In low speed application good value is near 1%, and in high speed solution it can be near to 20% (FIG. 3).*
12/15	**Dead zone:** 0,0 - 10,0% <=> 0 - 100 (10)	*is steady area, suitable size of this zone depends on the mechanical accuracy of the system, this value is also a ratio of the full stroke (%) (FIG. 3).*
13/15 **14/15**	**Range scale in:** + 0,0 - 50,0% <=> 0 - 500 (7) **Range scale out:** - 0,0 - 50,0% <=> 0 - 500 (70)	*adjustment is for scaling of the stroke, with this the scale can be adjusted after learning. The reverse and forward ends are individually scaleable to get the suitable mechanical stroke for set value from 0-10V (0-5V) (FIG. 5).*
15/15	**Start ramp:** 0,1 - 5s <=> 0 - 500 (100)	*defines the time before reaching full speed.*

Status LED Signals:

1. Fast blinking = Stopped due to current limiter active
2. Slow blinking = Overtemperature
3. 2x short, mid, long... = Hall pulse lost
4. 4x fast blinking (burst), pause = Overvoltage
5. 2x short, 1x long = Fault in
6. LED permanent on = Learning not completed, new learning required

FIG. 3

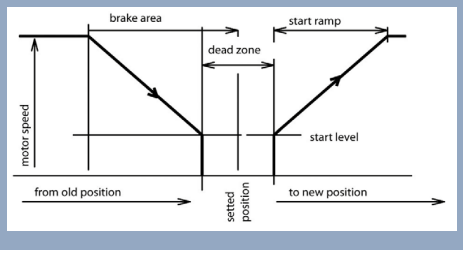
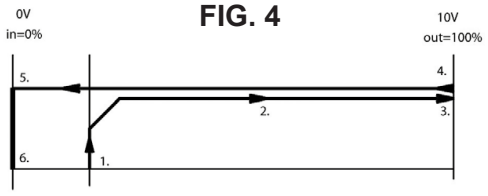
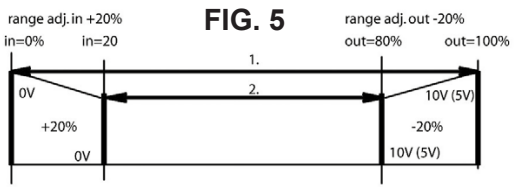


FIG. 4

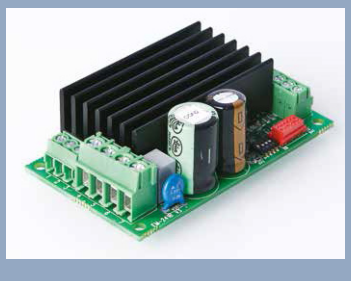


1. Start learning by giving an impulse to learn input (10)
2. Motor starts to run “out” direction with learn speed
3. Current limit stops the motor when mechanical end is reached
4. Motor starts to “in” direction and makes a full stroke.
   During stroke the pulse counter measures the range.
5. Motor reaches the mechanical end “in”, and current limit stops the motor.
6. Device stores full range value and is ready for use

FIG. 5



1. Original learned range = mechanical full range equals the signal range 0-10V (0-5V)
2. Modified range example:
   If range scale in = +20% and range scale out = -20%.
   now stroke of actuator is compressed to:
   positioning set value 0V = 20% position
   positioning set value 10V (5V) = 80% position

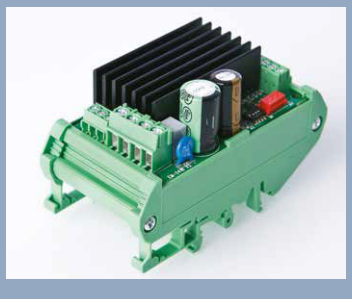


EEL-S2-2-A

(board alone)
73 x 43 x 25 mm (L x W x H)

EEL-S2-2-B

(box version)
102 x 73 x 47 mm (L x W x H)



EEL-S2-2-D

(DIN rail version) weight 93g
90 x 46 x 56 mm (L x W x H)

Accessories

- EEL-S2-PROGUSB
  Programming cable for PC
- EEL-S2-PROG
  Programming unit
- EEL-S2-ADAP
  Minifit-Adapter

Warnings and recommendations

- If S2-2 goes into “trip” (overcurrent) it is only possible to run actuator in opposite direction.
- Please adjust the max. current to be 10% higher than maximum current during load.
  This ensures the longest actuator lifetime.
- Please ensure that the power supply for the controller is capable of supplying sufficient current – otherwise the controller and the actuator may be damaged.
- Doublecheck correct polarity of power supply. If connected wrong the S2-2 will be damaged.
- Attention! S2-2 has no fuse in it. Use external fuse according to application (2 -> 10A slow).
- Bansbach does not have any responsibility over the possible errors in this data sheet.
- Specifications are to be changed without notice.

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02/2019

EEL-S2-3

Bansbach easylift

EEL-S2-3
Advanced Actuator Controller

Features:

- Synchronized parallel driving
- Current and temperature protection
- Settable drive speed
- Adjustable start- and stop ramp
- Different control modes
- Wide range of parameters
- Easy setting with serial interface
- Good repeatability of settings
- Autobalance feature

Technical Data

- Supply Voltage: 12/24VDC, filtered less than 20% ripple
- Quiescent current: 15mA
- Motor current: 2x10A cont. 2x20A, 25% duty
- PWM frequency: 2kHz
- Current limit: 1-20A
- Temperature limit: 120°C (Power stage)
- Ramp times: 0-2 sec
- Pulse input freq.: max.1kHz
- Pulse inputs: pull- up/down 10kO (Hi/Lo; 4-30V/0-1V)Environment
- Control inputs: 0-1V=OFF; 4-30V=ON (impedance 10kO)
- Fault output: Active, pull down max.50mA
- Aux. voltage output: 5V/20mA
- Measures: 78 X 73 X 25mm (LxWxH)
- Operating temp.range: -20° to +60°C
- Weight of board: 110g
- CE: Electromagnetic compatibility, Industrial Environment

The EEL-S2-3 is designed for driving two easyE-line actuators in parallel. Synchronization is achieved by adjusting actuator speed during operation.

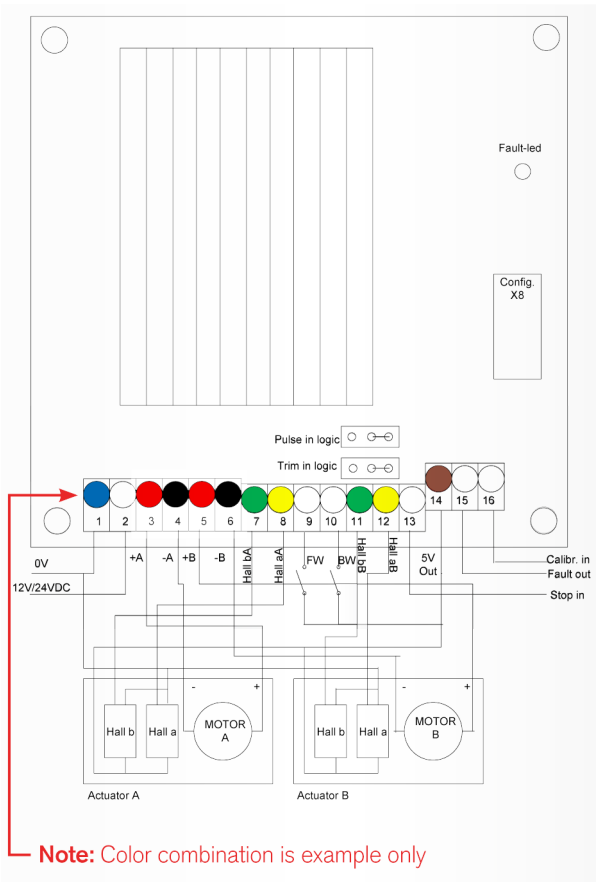
If adjustment cannot compensate unbalance between actuators, the actuators will be stopped. This way mechanical stress and breakage can be avoided. Additionally the EEL-S2-3 includes current limiter and power stage temperature protection. The EEL-S2-3 has adjustable start and stop ramps for smooth operation. The EEL-S2-3 works in conjunction with actuators with hall only.

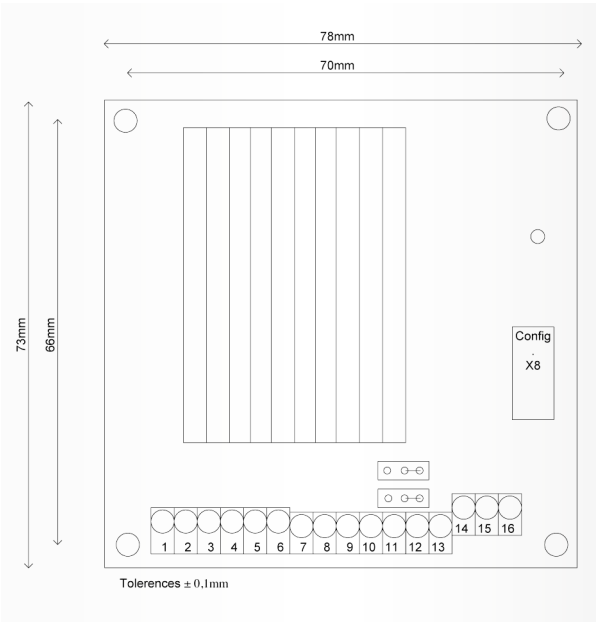
The basic control is done with Forward-, Backward-, and Stop-commands, either in continous mode or pulse mode.

Calibration input is for driving the system to its initial position. This is done with low speed.
A wide range of parameters can be altered to suit to different demands and applications.

The parameters are set by using the handy interface S2-Prog or by using the S2-USB dongle and your computer. Both must be connected to the red connector on the PCA.

Wiring S2-3





Screw Terminals

1 GND (0V) + (blue wire for hall)

2 Supply 12/24VDC (fuse required)

3 Actuator A +

4 Actuator A -

5 Actuator B +

6 Actuator B -

7 Hall b motor A (green)

8 Hall a motor A (yellow)

9 Forward(out) pos. command only

10 Backward(in) pos. command only

11 Hall b motor B (green)

12 Hall a motor B (yellow)

13 Stop, input for external stop input
Pos. command only.

14 5,4V/20mA output for Hall and controls
e.g. FW/BW command (brown wire for hall)

15 Fault output, active low on alarm. Open collector.

16 Calibration, pos. command starts calibration routine.

Connect motors and supply as in picture.

Inputs/Outputs

- **Pulse A and B** are for incoming feedback pulse-lines. Parameter 13 must be set to “1”
- **FW & BW** are command inputs forward/backward.
- **STOP** input is for the use of external stop command (eg. end switches).
- **Calibration input** is for starting the calibration routine.
- **FAULT output** - refer to fault situations on page 3
- **INPUTS:** 4V-30V as “high” signal level and 0V-1V as “low” signal level
- **OUTPUT:** NPN open collector max. 50mA

Parameter List

Connect S2-PROG or PC to the Config-connector. This can be done with power on. S2-PROG displays the type of the device. Push the select button and you can scan the parameters with arrow buttons. Parameters are changed with +/- buttons. Store new settings with save button (press and hold for more than 5 sec).

Parameter list with:	Quality	Set range	Default
1 Running speed	40-100%	40-100	100(%)
2 Calibration speed	20-60%	20-60	60(%)
3 Start ramp	0-2sec	0-20	0.5(sec)
4 Stop ramp	0-2sec	0-20	0(sec)
5 Current limit	1-25A	10-250	20(2A)
6 Difference limit	3-50pulses	3-50	10(pulses)
7 Behavior	smo->aggr	1-10	5
8 I-trip indication	disa=0; ena=1		1
9 Start condition	both dir=0; only rev if I-trip=1; only rev if stop=2; only rev=3		1
10 Control mode	cont=1; impuls=2; impuls-2=3; Cont + cont calibration=4		1
11 Safety reverse time	disa=0; 1-30 reverse time after I-trip		0(sec)
12 Auto balance trigger	disa=0; 1-255 trigger point active		0(pulses)
13 Double pulse mode	disa=0; ena=1		1
14 End limit FW	disa=0; FWD end limit=1-65535		0(pulses)

Parameter Discription

- **Running Speed** is the speed which is used in normal mode.
- **Calibration Speed** is the low speed used during calibration-routine.
- **Start- and stop ramps** define the acceleration and deceleration time to 0-100%-0 speed.
- **Current limit** is limit value for current trip. If current value is exceeded the motors will be stopped. During the period of start ramp + 1 sec the current limit is 1,5 times the current limit set value. Refer to datasheet for actual actuator for maximum current recommended when adjusting. Current limit value goes for both actuators (when limit is set to 20 it meas 2A for each actuator).
- **Difference limit** is the value for largest allowable difference between A an B pulse counters. If value is exceeded motors will be stopped.
- **Adjust behavior** defines how fast and intensively the controller will adjust the synchronization between motors A and B. Smooth 1 -> Aggressive 10.
- **I-trip-indication** – fault output can be set to “on”(default) also in current trip situation.
- **Start condition** enables the device to re-start the motor to both or only to opposite direction after a trip or stop situation.
- **Control Mode** sets the control-mode. In continuous mode the motor runs as long as command (fw or bw) is “on”. In impulse mode a short command starts the motor and the direction is changed with opposite command. Motor will stop only with “stop” command. In “Impulse-2” mode motor starts with short (fw/bw) impulse. Following command stops the motor, and next command (fw/bw) starts the motor again. In “Continous(4)” mode actuators run as long as buttons are activated and during calibration buttons must be activated too. Of course, in all modes the difference limit, current limit and stop-command will stop the motors.
- **Safety Reverse** means automatic reverse run if the actuator has been stopped as a result of overload = I-trip. Stop input also triggers this function.
- **Auto-balance trigger** parameter value sets the starting point for auto balance. Value is the number of pulses counted from mechanical home.
- **Double pulse mode** enables the controller to handle actuators with double hall pulses. Must always be enabled when using Concens actuators.
- **End limit fw** is a pulse counter “end stop” for fw direction. The positions is determined in pulse edges from 1-65535. Value 0 means that end stop is not in use. Note: This feature cannot be used in all combinations of gear ratio and stroke length due to number of pulses may exceed 65535.
- **Calibration routine** is a calibration cycle for balancing the system. Calibration can be started by giving fw and bw commands at the same time for 3 sec or with incoming signal to calibration input. Calibration routine can be interrupted with new FW or BW command or signal to STOP input. When calibration routine starts, both motors start to run to same direction and will run until current limit stops the motor or pulses stop coming. During the calibration routine the fault led is blinking slowly. When blinking stops and both motors have stopped the device has reset the pulse counters. Now the devise is ready for use. If there is need to change the calibration direction, swap the motor wires and the hall wires.
- **Auto balance** starts balancing routine before mechanical endstop. The trigger point is set with parameter 12. If “auto balance” is active it balances the system automatically in the end of stroke. This will prevent the possible pulse error accumulation. Auto balance always works to the calibration direction.

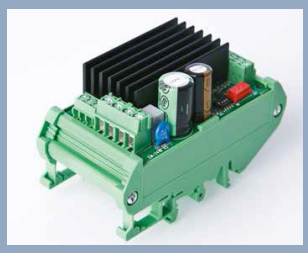
EEL-S2-3-A

(board alone)
73 x 78 x 25mm (L x W x H)

EEL-S2-3-B

(Box)
102 x 73 x 47 mm (L x B x H)

EEL-S2-3-D



(DIN rail version)

Accessories

- EEL-S2-PROGUSB
  Programming cable for PC
- EEL-S2-PROG
  Programming unit
- EEL-S2-ADAP
  Minifit-Adapter

Fault Situations

Motor is jammed (current trip), pulses disappear or pulse counter difference is too high (difference limit). The controller will stop the motors and FAULT output will be pulled down (also in I-trip if indication is enabled). When motor is restarted the FAULT output is reset. Faults are also indicated with fault-led as follows:

1 blink = position corrupted(calibration needed)
2 blinks = current trip
3 blinks = pulses disappear
4 blinks = difference limit
5 blinks = temperature protection

Jumpers

The Jumpers must be set to the most right position (See FIG. 1)

Monitoring

During normal use it is possible to monitor the function of controller with the S2-PROG. Select the monitor mode in S2-PROG and you can check the following values:

1 current, Motor A 10-250 = 1-25A
2 current, Motor B 10-250 = 1-25A
3 pulse count/run cycle, only motor A
4 pulse count difference
5 position counter A 0-65535
6 position counter B 0-65535

Feedback Pulses

The controller counts pulse edges so counted value is double compared to the actual number of pulses.

Warnings and recommendations

- S2-3 has no fuse in it. Use external fuse according to application.
- Double-check correct polarity of power supply. If connected wrong S2-3 will be damaged.
- Please ensure that the power supply for the controller is capable of supplying sufficient current - otherwise controller and actuator may be damaged.
- Please adjust max current to be 10% higher than maximum current during load to ensure the longest actuator lifetime.
- Bansbach does not have any responsibility over the possible errors in this data sheet.
- Specifications are to be changed without notice.

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02/2019

EEL-S3

EEL-S3
Battery Based Actuator Control System

FEATURES:

- Up- and Down-Function
- Battery powered for mobile use
- 24VDC, NiMh or Li-Ion battery
- Patented battery system
- Customized colors and foil design
- Wired handset
- No Hall sensors are supported
- **Battery-Capacity:**
  - NiMH: 1400m Ah
  - Li-Ion: 2100m Ah

TECHNICAL DATA:

- Supply: 24VDC, NiMH or Li-Ion battery
- Idle current: < 5mA
- Current limit: 8A/ch max. total 12A
- Current trip delay: 30ms
- Ramps: 0-3 sec
- Operating temp: +5° - +40°C
- Connector type: Molex Mini-Fit 6 pin

The easyE control S3 is used to control our easyE-line actuators. This battery-powered controller which has an unique design allows an actuator to move up and down and be used in a variety of different applications. Also and especially when it gets mobile.

THE FOLLOWING COMPONENTS BELONGS TO THE S3 SYSTEM:

- S3 Control Box
- S3 Handset
- S3 Battery
- S3 Battery Charger

The S3 control box is designed to handle 1 actuator. It is controlled with a wired handset.

The battery is designed to be very easy to change without tools. This is done by a patented magnetic principle.

The S3 system contains a rechargeable 24VDC, NiMh or Li-Ion battery, enabling the actuator solution to be fully mobile.

Standard S3 solution includes IP50 protection with IP65 protection available.

SYSTEM COMPONENTS

S3 CONTROL BOX

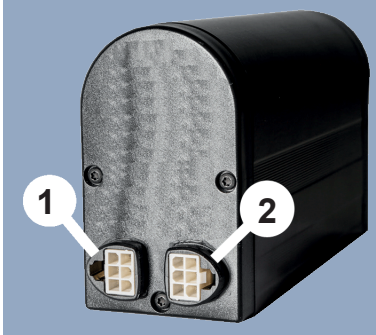
S3 BATTERY CHARGER

S3 BATTERY

S3 BRACKET

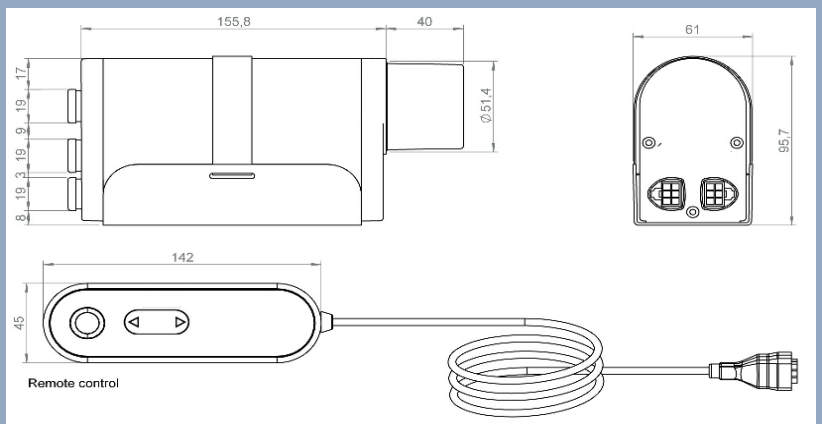
S3 HANDSET

ELECTRICAL CONNECTIONS



1 Actuator
2 Handset

MECHANICAL DIMENSIONS



The flyer is subject to technical alterations and printing mistakes.

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10/2018

EEL-S4

EEL-S4
Battery Based Actuator Control System

Features:

- 4-channel fully programmable controller
- Battery powered for mobile use
- 24VDC NiMh or Li-Ion replaceable battery
- Patented battery system
- Customized colors and foil design
- Wired handset
- Adjustable soft- start and stop
- Adjustable current limit in and out
- Adjustable calibration speed and current
- Adjustable virtual min/max-position
- Individual or synchronous operation for drive 2-3-4 or 2+2 actuator
- Audible and visual status signal

Technical Data

- Supply: 24VDC NiMH or Li-Ion battery
- Idle current: < 5mA
- Current limit: 8A/ch max. total 12A
- Current trip delay: 30ms
- Ramps: 0-3 sec
- Operating temp.: +5° - +40°C
- Connector type: Molex Mini-Fit 6 pin
- Weight
  - Control Box: 430g
  - NiMH Battery Charger: 430g
  - Li-Ion Battery Charger: 410g
  - Battery: 530g (Li-Ion: 400g)
- Battery Capacity:
  - NiMH: 1400m Ah
  - Li-Ion: 2100m Ah

The easyE S4 system is a versatile solution for control of electric actuators. The unique design, strong power supply system and the option of controlling multiple actuators makes the S4 system attractive for use in various applications.

The S4 system consists of:

- Control Box
- Handset
- Battery
- Battery charger

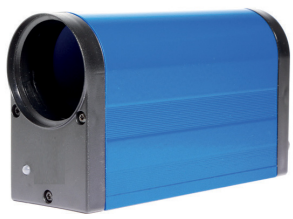
The S4 concept is designed for optimal flexibility making configuration, programming and installation very easy. Additionally, service and replacement of e.g. batteries are extremely easy with the patented magnetic principle. No tools are required.

The S4 Control Box is designed to handle up to four actuators in groups, synchronous or individually. It is controlled with a wired handset, which can be delivered in five different button layouts depending on customer needs. Furthermore, the S4 can be equipped with emergency stop.

The S4 system contains a rechargeable 24VDC NiMh or Li-Ion battery, enabling the actuator solution to be fully mobile.

Standard S4 solution includes IP50 protection with IP65 protection available.

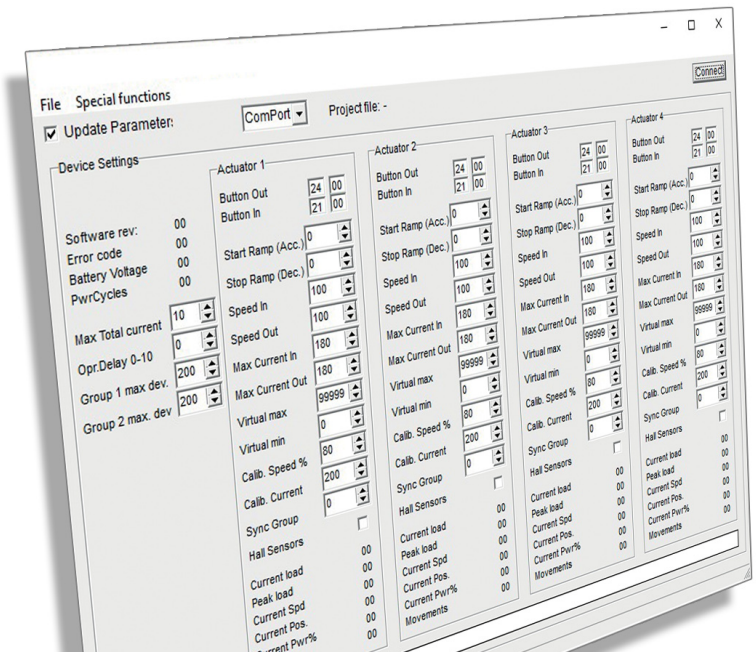
System Components



S4 Control Box

Handset

Battery

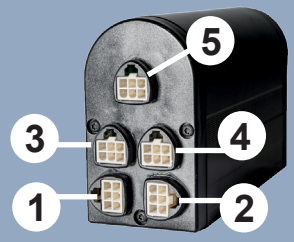


Configuartion Tool

Battery charger

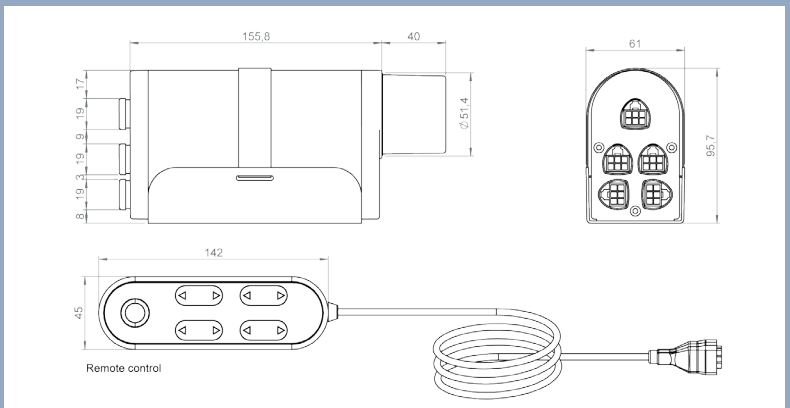
Bracket

Electrical connections



1 Actuator 1
2 Actuator 2
3 Actuator 3
4 Actuator 4
5 Handset, Power, Emercency Stop

Mechanical Dimensions



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Bansbach easylift

03/2018