

HVAC Actuators

Schneider Electric Motion



Make the most of your energy

Schneider
Electric

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Heating Ventilating and Air Conditioning



Typical Applications of Actuators

Control electrical engineering

Electrically adjustable fittings

Valves for water treatment

Exhaust valves on boilers

Air valves for oil and gas burners



Control The Combustion Process

Energy efficiency solutions

Domestic

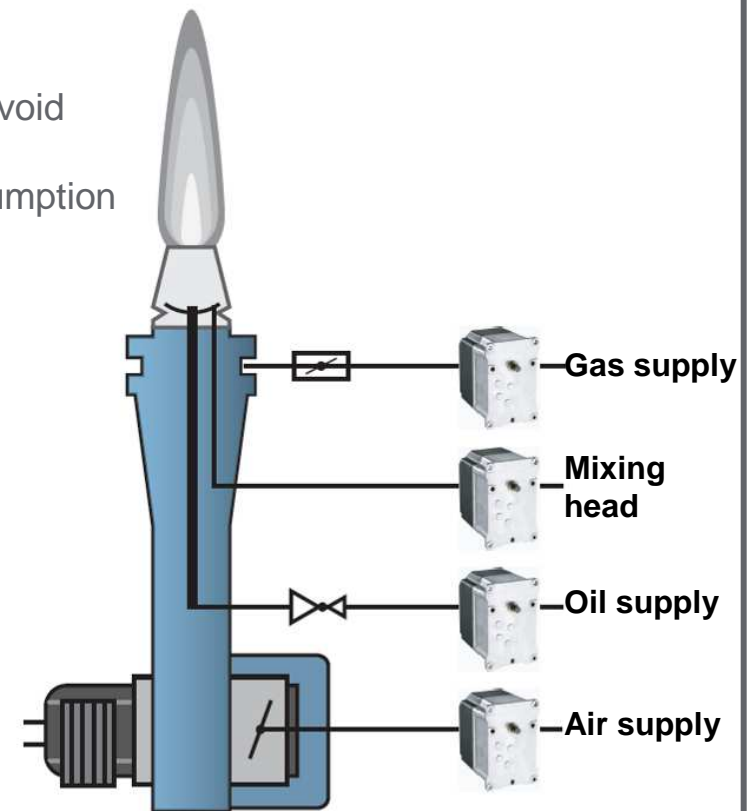


Commercial & Industrial

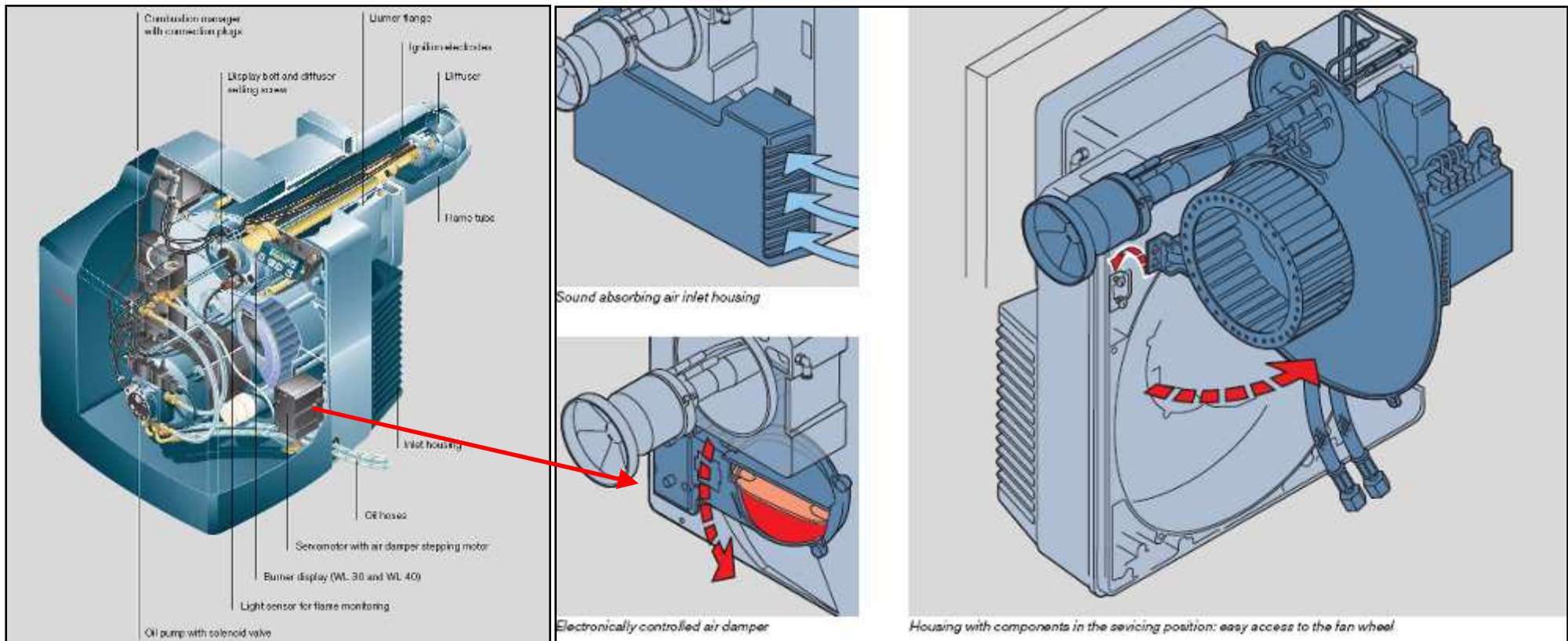


Control The Combustion Process

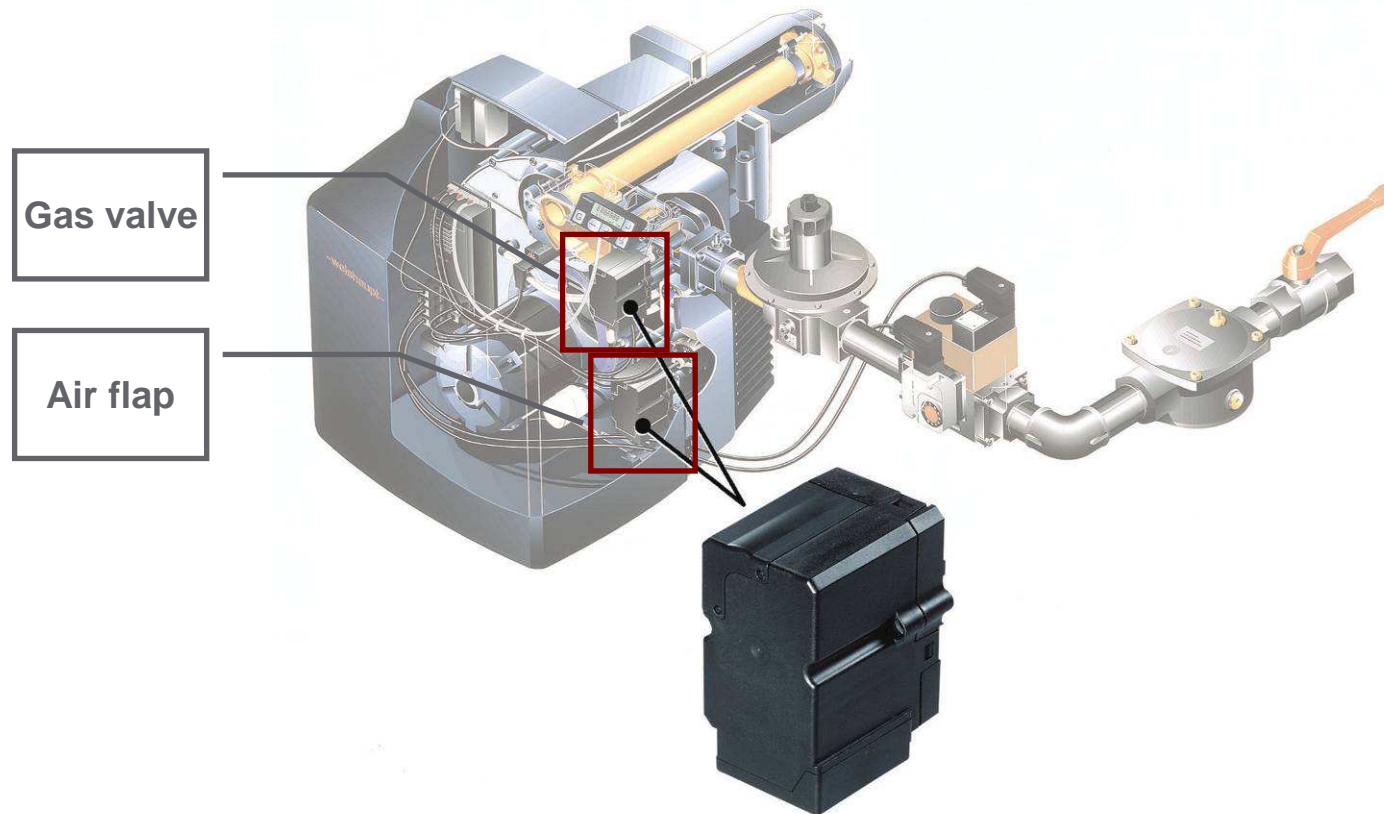
- Positioning of the air damper – air damper actuator
 - Opens and closes the air flap which is positioned between fan and combustion chamber
 - Closes the air channel which leads to the combustion chamber to avoid loss of heat
 - Optimizing the combustion process, reducing the fuel oil/ gas consumption and reducing the air pollution by modulating the air flow with the air damper
- Gas and oil valve movement – gas/ oil valve actuator
 - Opens and closes the gas valve or the fuel oil supply
- Mixing Assembly – mixing actuator
 - Moves the mixing assembly resp. mixing head where the injector is assembled
- Mixing Water – water valve actuator
 - Moves the valve for mixing cold/hot water at the heater-boiler



Control The Combustion Process



Control The Combustion Process



The actuator moves the air flap and the gas or oil valve

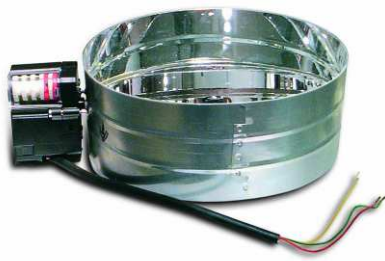
The Tubular Skylight

Function:

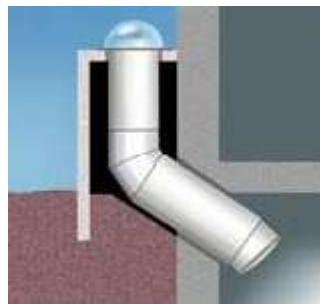
The tubular skylight system captures light through a dome on the roof and channels it down through an internal reflective system.

At the ceiling level, a diffuser that resembles a recessed light fixture spreads the light evenly throughout the room.

The actuator provided by Schneider Electric Motion controls the intensity of the daylight – designed for maximum comfort



(© Patented Dimmer Solarspot® - www.solarspot.eu)



A young child with curly hair, wearing a white sleeveless top, stands on a sandy beach holding a large, colorful globe. The background shows a vast, flat landscape under a clear blue sky.

Overview About Actuators

The Actuators provided by Schneider Electric Motion ...

... reduce your energy consumption

Type: STM 6SF-L

- Easy to use HVAC actuator
- Stall-resistant split-phase motor inside
- Mechanical spring inside for return movement and for a safety precaution in case of a power outage
- For lower performance range of burners



Type: STM 6SF-L

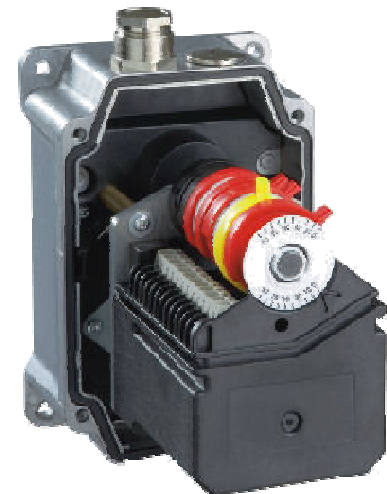
General data for actuator type STM 6SF-L

- Power supply: 230 V / 50Hz
- Sense of rotation: Counter-clockwise
- Control time: 6 s
- Driving torque: 20 Ncm
- Reverse torque: 1 Ncm
- Degree of protection: DIN 40050, IP40
- Temperature: Operation: 0..60°C



Type: STM

- Powered by synchronous motor for constant speed
- Mechanical control unit with adjustable cams
- Very precise start/stop behaviour
- Potentiometer for feedback signal as an option
- Available as clockwise or counter-clockwise version



Type: STM

General data for actuator type STM

- Power supply: 230, 110 or 24 VAC 50/60Hz
- Switching power: 10(2) A
- Degree of protection: DIN 40050, IP40
IP54 (Q3, Q15)
- Temperature: Operation: 0..+60°C



Type: STA

- The STA is based on the STM series, equipped with a relay on the control unit (e.g. for higher switching power and more switching possibilities)
- The STA has the same general data as the STM



Type: STE Analogue I/O

- Electronic control unit with 0..10V or 4-20mA input for position control
- Two potentiometers to define the angle of rotation
- Two cams and switches inside as mechanical safety limits
- One additional switch for external use
- Very precise start/stop behaviour
- Feedback signal provided by integrated potentiometer
- Available as clockwise or counter-clockwise versions



Type: STE Analogue I/O

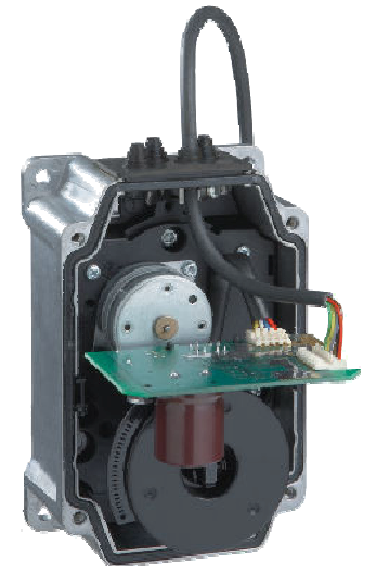
General data for actuator type STE analogue I/O

- Power supply: 230V, 110V
and 24V AC 50/60Hz
- Switching power: 10(2) A
- Degree of protection: DIN 40050, IP40
IP54 (Q3, Q15)
- Temperature: Operation: 0..+60°C



Type: STE Digital I/O

- Electronic control unit with digital I/O for position control (stepper driver)
- Speed-controllable via frequency of digital pulses
- Angle of rotation adjustable via digital pulse signal / number of pulses
- Very precise start/stop behaviour
- Feedback signal generated by integrated optical encoder system
- Reference marks for start/end positions



Type: STE Digital I/O

General data for actuator type STE digital

- Power supply: 24V DC
- Torsion angle: 0..90°
- Running Time: Variable, depending on external pulse frequency
- Degree of protection: DIN 40050, IP40
IP54 (Q3, Q15)
- Temperature: Operation: 0..+60°C



A young child with curly hair, wearing a white sleeveless top, stands on a sandy beach holding a large, colorful, iridescent balloon. The background shows a vast, flat expanse of sand leading to a clear blue sky.

Technical Data

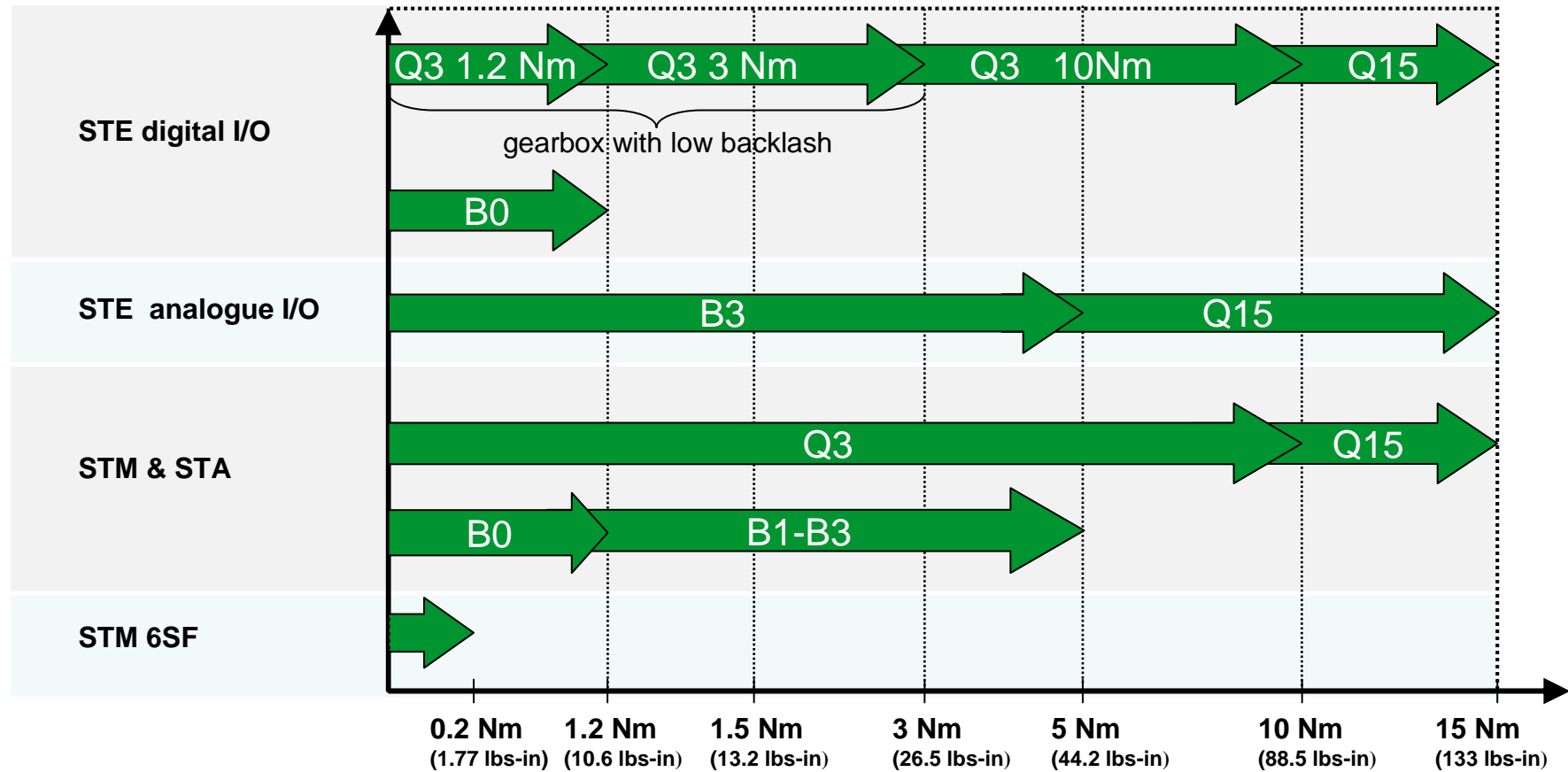
The Actuators provided by Schneider Electric Motion ...
... are customised products

Actuators: Customized Products

The following modifications are possible on demand

- Shaft: flattened, slotted, cross-hole, with pivot, thread or pinion, shorter, longer, etc.
- Run-time (e.g. from 3s/90° to 120s/90°) by changing the motor or gearbox parts
- Angle for adjustment (cam-position)
- Number of cams and switches
- Input supply voltage (24, 110, 230V)
- Modifications to the internal control unit
- Potentiometer-assembly
- Customised connection cable
- others on request.....

Actuator Product Range



Possibilities for STM & STA & STE analogue:

Torque <-> Running Time <-> Body Size

Running Time for 90°		Rated torque [Nm]	Static holding torque [Nm]	Body Size	Product Family
50 Hz [s]	60 Hz [s]				
3	2,5	1,6	0,4	B1	STA/ STM
3	2,5	1,6	0,4	B2	STA/ STM
3	2,5	1,6	0,4	B3	STM/ STA/ STE analogue
3,5	2,9	1	0,3	B0	STA/ STM
4,5	3,8	3	1,5	Q3	STM/ STA/ STE analogue
5	4,2	0,6	0,2	B0	STA/ STM
6	5,0	1,4	0,4	B1	STA/ STM
6	5,0	1,4	0,4	B2	STA/ STM
6	5,0	2,6	1	B3	STM/ STA/ STE analogue
7	5,8	4,5	1,4	Q3	STM/ STA/ STE analogue
10	8,3	6	4	Q3	STM/ STA/ STE analogue
12	10,0	3	1,1	B1	STA/ STM
12	10,0	3	1,1	B2	STA/ STM
12	10,0	3	1,1	B3	STM/ STA/ STE analogue
13	10,8	1	0,6	B0	STA/ STM
15	12,5	15	10	Q15	STM/ STA/ STE analogue
15	12,5	9	6	Q3	STM/ STA/ STE analogue
20	17,0	10	4	Q3	STM/ STA/ STE analogue
30	25,0	3	2	B1	STA/ STM
30	25,0	5	5	B1	STA/ STM
30	25,0	3	2	B2	STA/ STM
30	25,0	5	5	B2	STA/ STM
30	25,0	3	2	B3	STM/ STA/ STE analogue
30	25,0	5	5	B3	STM/ STA/ STE analogue
30	25,0	10	6,5	Q3	STM/ STA/ STE analogue
30	25,0	15	10	Q15	STM/ STA/ STE analogue

Possibilities for STE digital:

Torque <-> Running Time <-> Body Size

Running Time for 90° Fastes Running Time [s]	Rated torque [Nm]	Static holding torque (without Power Supply) [Nm]	Body Size	Product Family
4,5s with 200 Hz*	1,2	0,8	Q3	STE digital
4,5s with 200 Hz*	3	2,6	Q3	STE digital
10s with 200 Hz*	8	4	Q3	STE digital
15s with 200 Hz*	10	6	Q3	STE digital

* Max. Stepper Frequency

Possibilities: Maximum Cams <-> Body Size

Max. Cams:	Body Size					
	B0	B1	B2	B3	Q3	Q15
With Potentiometer	---	--	3	6	3	3
Without Potentiometer	5	3	7	7	7	7
Graduated Collar	---	x	x	x	x	x

- Without graduated collar - one additional cam

Type Code For Actuators STM

Example: **STM30 B3.37/6 51N RP**

Actuator Type: **STM30 B3.37/6 51N RP**

STE=electronic actuator

STA=actuator with cams and relay

STM=actuator with cams

Running time for 90 °: **STM30 B3.37/6 51N RP**

Body Size: **STM30 B3.37/6 51N RP**

B0, B1, B2, B3, Q3, Q15

Motor type inside: **STM30 B3.37/6 51N RP**

e.g. RSM 36/8, RSM37/6, RSM42/6

Operation program / wiring: **STM30 B3.37/6 51N RP**

5=Number of function cams

1=Counter number

N=Cams ("Nocken")

Sense of rotation: **STM30 B3.37/6 51N RP**

R=Right, L=Left

Potentiometer installation: **STM30 B3.37/6 51N RP**

P = Prepared for potentiometer installation

POT = Potentiometer integrated

Type Code For Actuators STA

Example: **STA13 B0.36/8 2N36 LP**

Actuator Type: **STA13 B0.36/8 2N36 LP**

STE=electronic actuator

STA=actuator with cams and relay

STM=actuator with cams

Running time for 90 °: **STA13 B0.36/8 2N36 LP**

Body Size: **STA13 B0.36/8 2N36 LP**

B0, B1, B2, B3, Q3, Q15

Motor type inside: **STA13 B0.36/8 2N36 LP**

e.g. RSM 36/8, RSM37/6, RSM42/6

Operation program / wiring: **STA13 B0.36/8 2N36 LP**

2=Number of cams to control the motor inside

N=Cams ("Nocken")

36=Counter number

Sense of rotation: **STA13 B0.36/8 2N36 LP**

R=Right, L=Left

Potentiometer installation: **STA13 B0.36/8 2N36 LP**

P = Prepared for potentiometer installation

POT = Potentiometer integrated

Type Code For Actuators STE

Example: **STE30 B3.37/6 I01 L**

Actuator Type: **STE30 B3.37/6 I01 L**

STE=electronic actuator

STA=actuator with cams and relay

STM=actuator with cams

Running time for 90 °: **STE30 B3.37/6 I01 L**

Digital Version = Gear Identifier

Analogue Version = Running time

Body Size: **STE30 B3.37/6 I01 L**

B0, B1, B2, B3, Q3, Q15

Motor type inside: **STE30 B3.37/6 I01 L**

e.g. RSM 36/8, RSM37/6, RSM42/6

Operation program / wiring: **STE30 B3.37/6 I01 L**

I = 4-20mA Input and Feedback

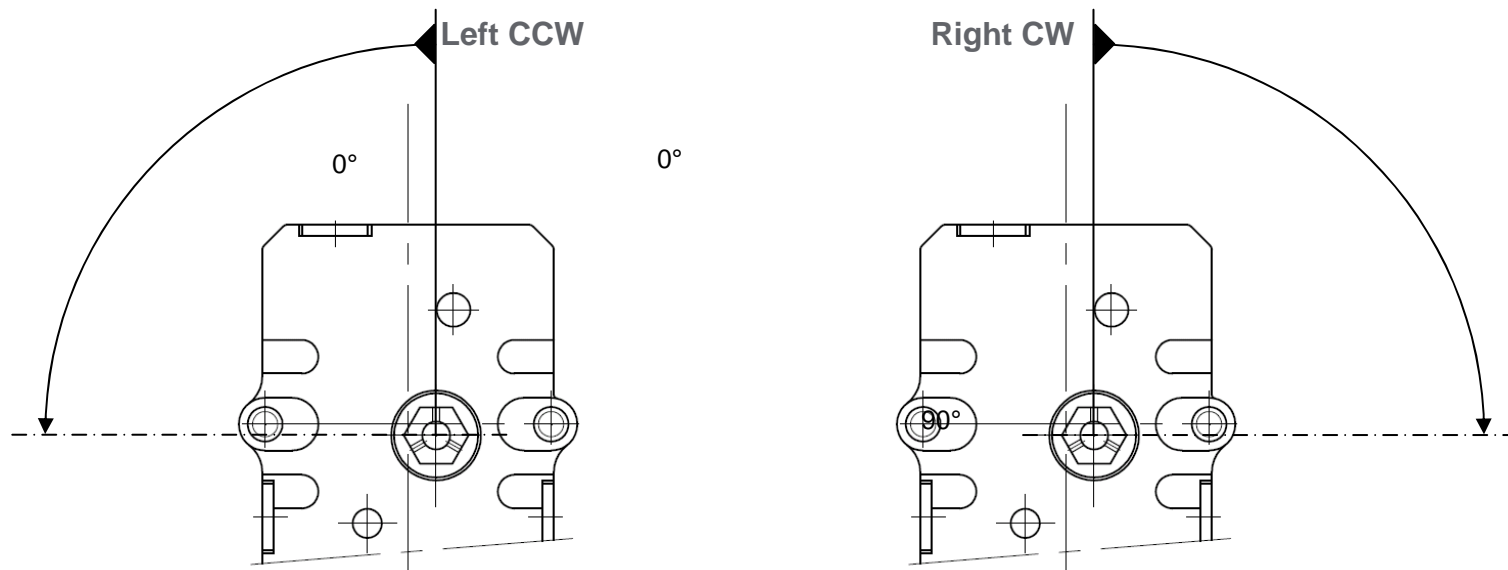
U= 0-10V Input and Feedback

01=Counter number

Sense of rotation: **STE30 B3.37/6 I01 L**

R=Right, L=Left

Declaration: Sense Of Rotation



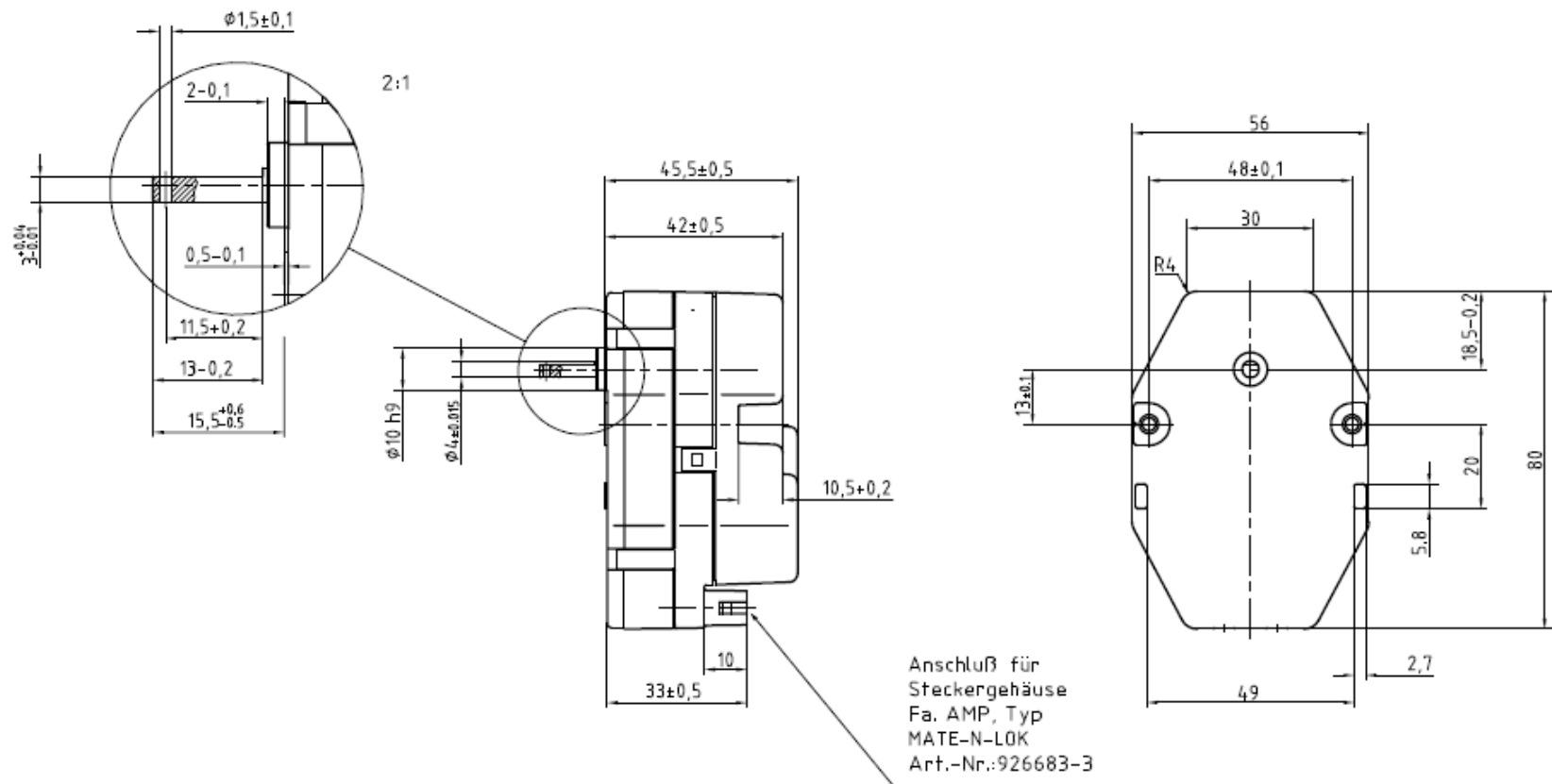
(as you look at the end of the protruding motor shaft)

A photograph of a young child with curly hair, wearing a white sleeveless top, standing on a sandy beach. The child is holding a large, colorful, iridescent balloon. The background shows a vast, flat expanse of sand leading to a clear blue sky at the horizon.

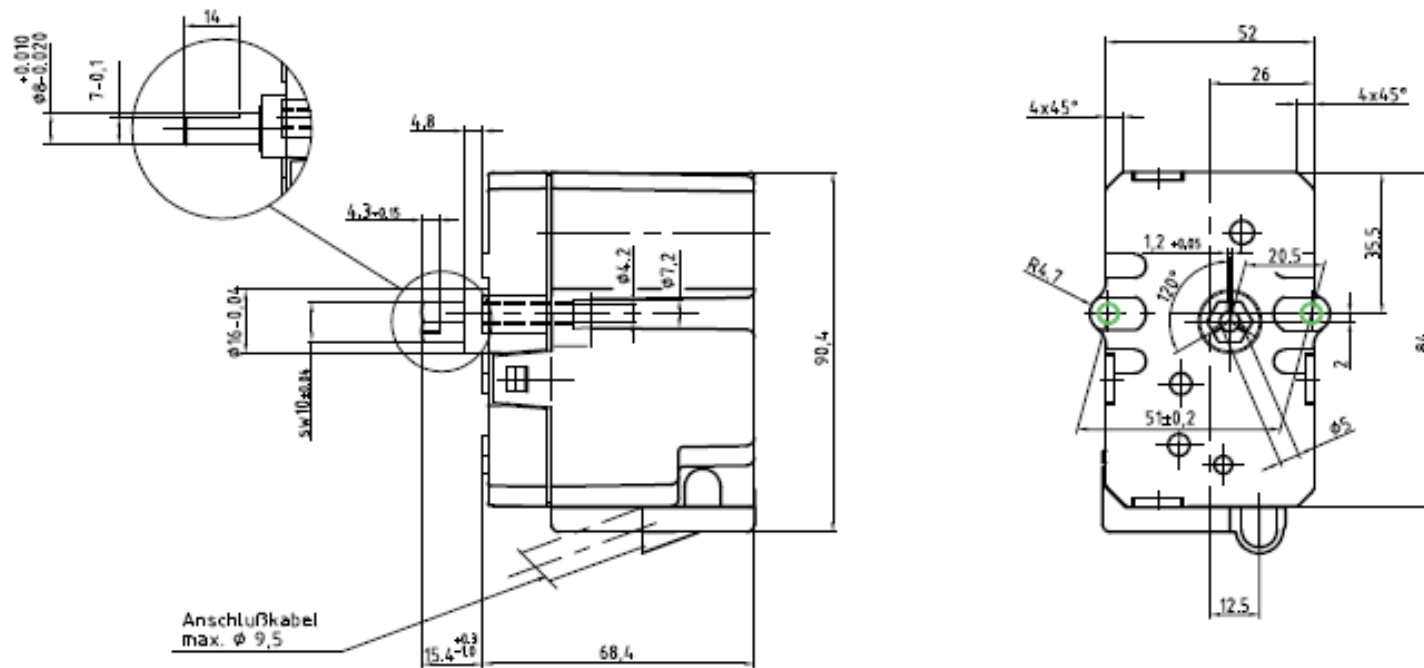
Scale Drawings

The Actuators provided by Schneider Electric Motion ...
... and all Body Sizes and Housings

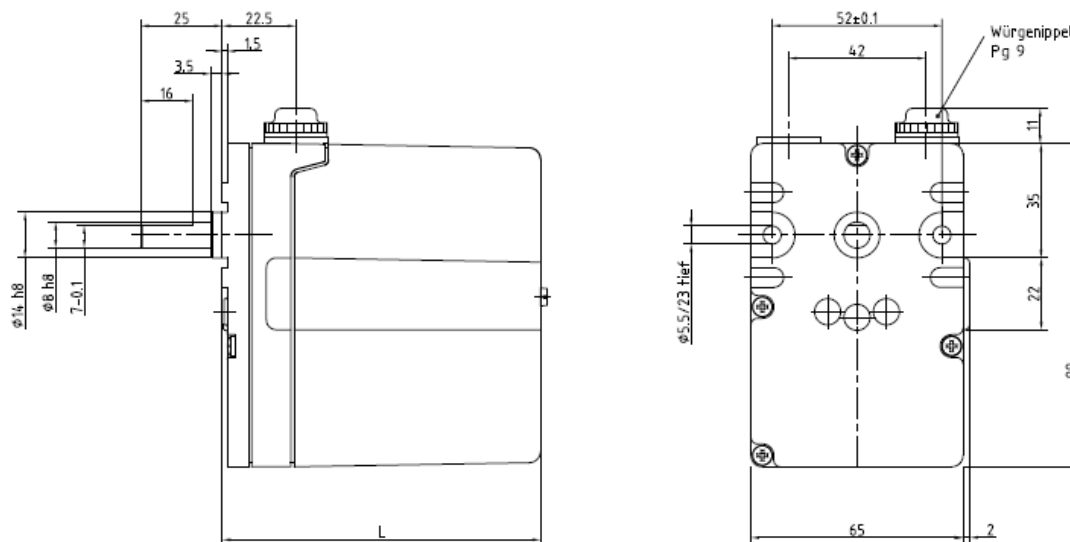
STM6 SF-L



STE/ STM Body Size B0



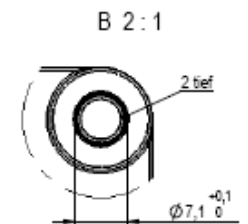
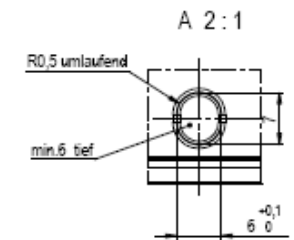
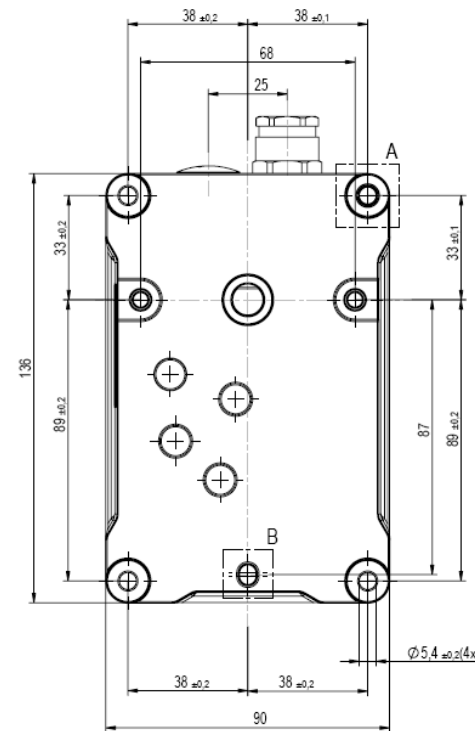
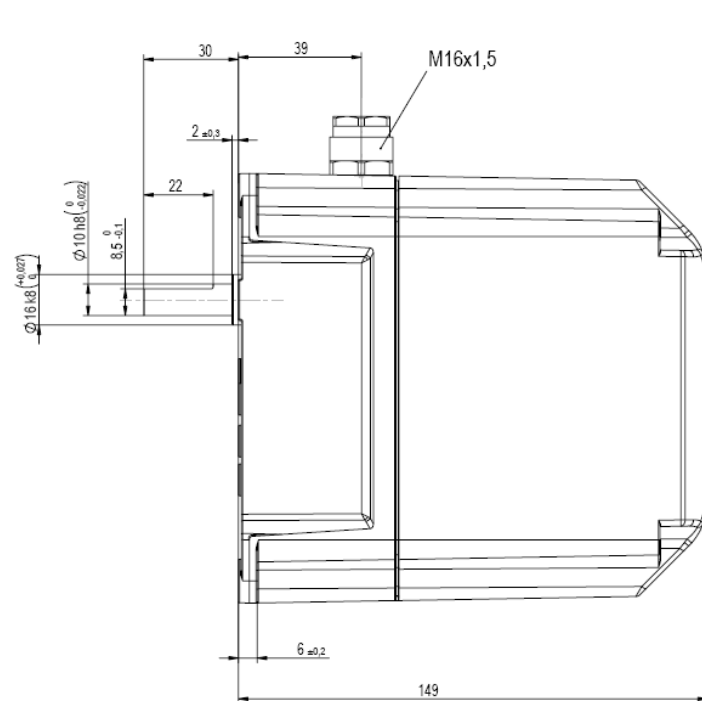
STM/ STE Body Size B1, B2, B3



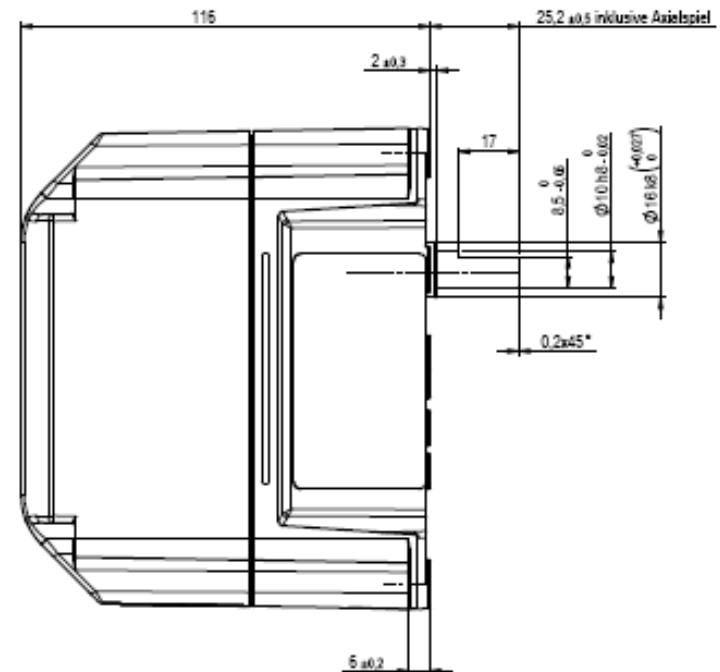
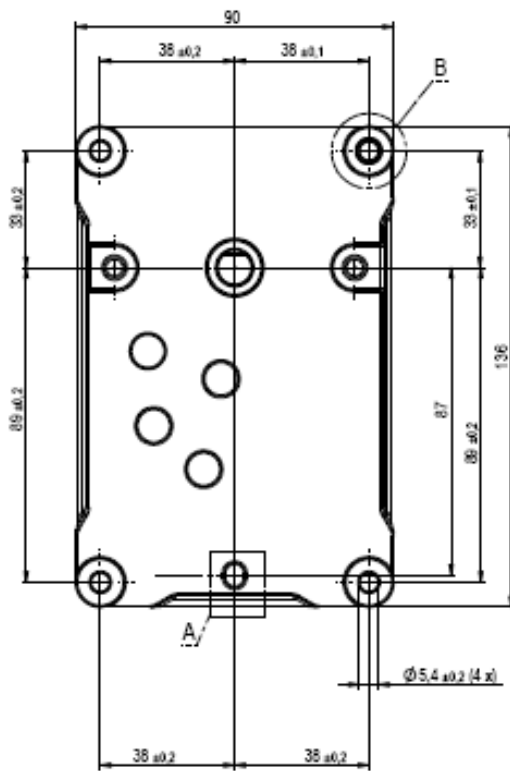
KA-STA STM B1, B2, B3

Baugröße	L
B1	65,5
B2	97,5
B3	114,5

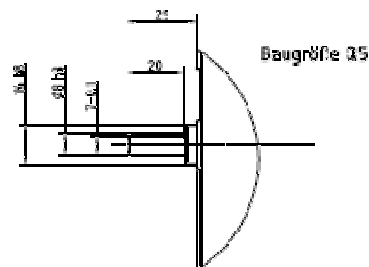
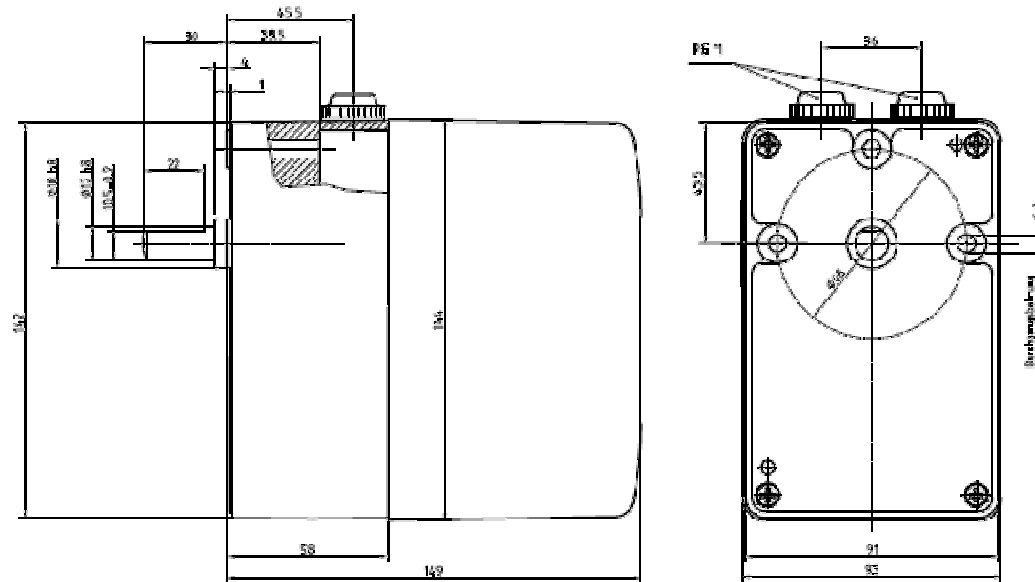
STM Body Size Q3



STE Body Size Q3



STE/ STM Body Size Q15



STA STM Q15 Q5

Reduce Your Energy Consumption

with Actuators provided
by Schneider Electric Motion

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