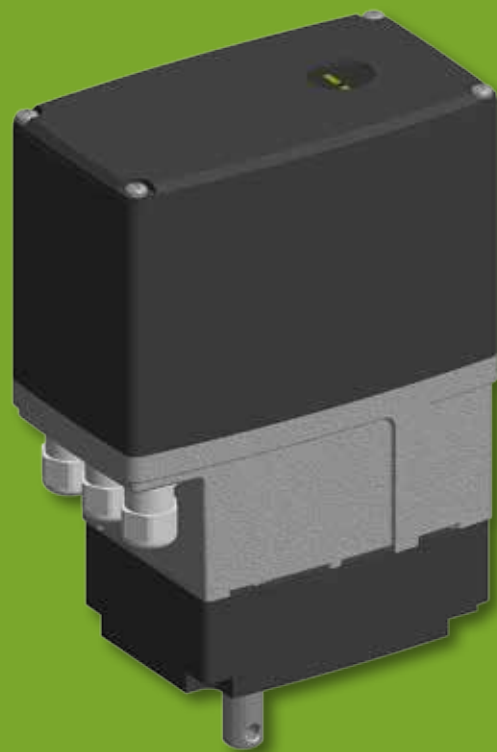


nano⁺

Electrical Rotary Drive



Synchronous motor technology

- The permanent magnets built into the synchronous motor ensure a high holding torque even in a de-energized condition.
- The motor speed depends solely on the voltage frequency. Therefore a constant and load-free actuating time is ensured.

Classic shut-off system via switching cams and micro switches

- No voltage supply necessary for position indication and shut-off. Nano actuators are 100% connection compatible to ARIS actuators sold before 2014; perfectly suitable as exchange actuators.
- Tool-free adjustable aluminum switching cams allow a fast and exact actuator setup.
- Additional fixation possible by TufLok-secured threaded pin inside the switch cam

Mechanical data

- Robust aluminum body allows usage in rough industrial environment; high operational safety.
- Aluminum cover protects reliably all functional parts.
- Captive cover screws allow a safe and easy attachment and screwing of the cover; short initial setup times.
- Variety of standard retaining bores, incl. ISO 5211, allow an easy adaption of nearly all valves without expensive mounting brackets.
- The compact design allows usage even in constricted spaces.
- Short delivery times of special adaptations by a special changeable shaft system.

Self-adjusting potentiometer

- Optional potentiometer allows a permanent feedback of the current actuator position.
- The potentiometer self-adjusts automatically to the path after setup via an integrated friction clutch.
- Several types allow an ideal utilization of the full potentiometer range:
Nano S 90°/180°/320°, Nano M 30...40 Nm 10°...150°, Nano M 50...60 Nm 10°...100° (optional Multiturn)

Options



Cam shapes

- 330° / 180°



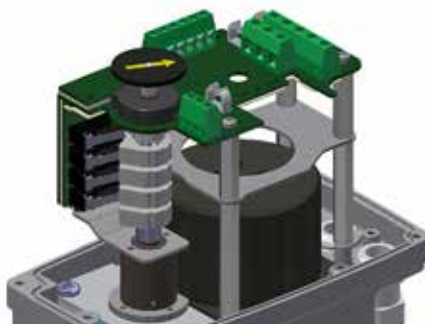
Hand wheel

- Automatic declutching
- Non-rotating



Mechanical position indicator

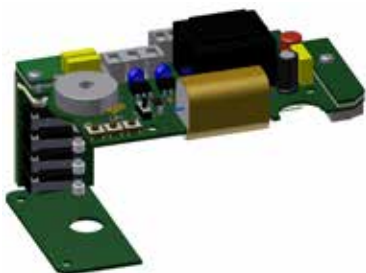
- Freely adjustable



Multi turn

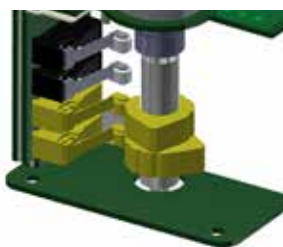
- Optional special resolution for potentiometer and shut-off system
- For applications with more than 1 rotations

Options



PMR-Nano

- Power supply: 230 V \pm 10%, 50/60 Hz
Special voltages/frequencies available
- Nominal value input: 0 (4) upto 20 mA (DC), optional 0 (2) upto 10 V
Burden 250 Ω , overload protection 25 mA
Reverse voltage protection up to -25 mA
Resolution 10 bit
- Actual value output: Fixed limits: 0 or 4-20 mA (Option 0 or 2-10 V)
Current sink, burden max. 500 Ω
Resolution 10 bit



Two or four additional auxiliary switches

- Adjustment via tool-free switching cams
- Various cam shapes allow different functions of the auxiliary switches



Service switch

- Manual/Automatic operation
- Left/Right hand rotation
- Integrated into the actuator



Current output (additional board)

- Position feedback 4–20 mA



Potentiometer

- 1 k Ω /10 k Ω
- Resolution: Nano S 90°/180°/320°, Nano M 30...40 Nm 10°...150°, Nano M 50...60 Nm 10°...100° (optional Multi turn)
- EN-approved for electronic fuel/air compound control (5 k Ω)



Parallel relay/Single-wire control

- AC relay
- Completely wired
- Operating voltage=Motor voltage
- Parallel operation of several actuators



Heater

- For heating the actuator's interior to avoid water condensation

+ nano

Type	Torque [Nm]	Actuating time [s/90°]
Nano+ S 05-03	5	3
Nano+ S 05-06	5	6
Nano+ S 05-15	5	15
Nano+ S 05-30	5	30
Nano+ S 05-60	5	60
Nano+ S 10-03	10	3
Nano+ S 10-06	10	6
Nano+ S 10-15	10	15
Nano+ S 10-30	10	30
Nano+ S 10-60	10	60
Nano+ S 15-06	15	6
Nano+ S 15-15	15	15
Nano+ S 15-30	15	30
Nano+ S 15-60	15	60
Nano+ S 20-06	20	6
Nano+ S 20-15	20	15
Nano+ S 20-30	20	30
Nano+ S 20-60	20	60

Other values upon request.

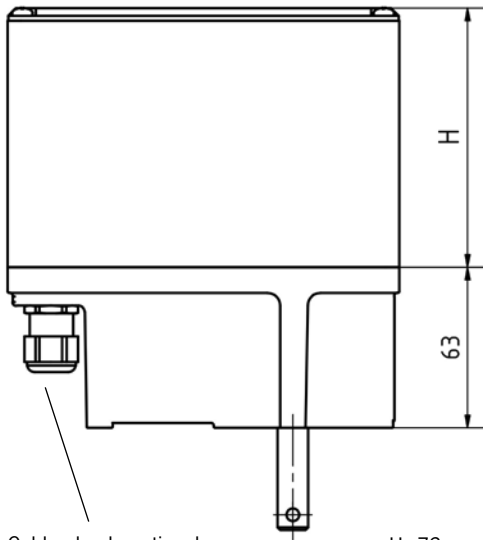
Specifications

Motor	Synchronous motor, short-circuit proof
Protection class	IP 65 (optional IP 66)
Ambient temperature	-15 °C...+60 °C/optional -40 °C...+80 °C (with PMR: 0 °C...+60 °C)
Housing	Alu die cast (EN AC-44200) powder-coated
Gear	Metal
Cover	Aluminum EN AW-6060 T6
Shaft	1.4021
Position indicator	Optional
Power supply	230 V AC (optional 115 V AC/24 V AC)
Additional switches	2 or 4 (optional)
Potentiometer	Optional
Travel	10°...330° (optional multi turn)
Duty cycle	100%
Connection	3 cable entries M16x1.5
Path cutoff	Switch cams/micro switches
Maintenance	Lifetime lubrication (maintenance free)
Control	3-point-step



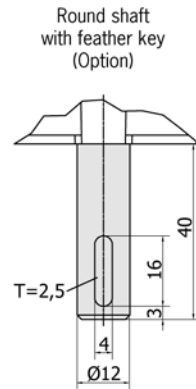
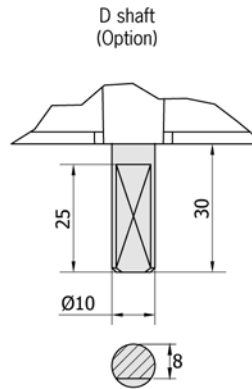
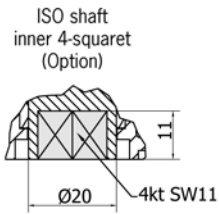
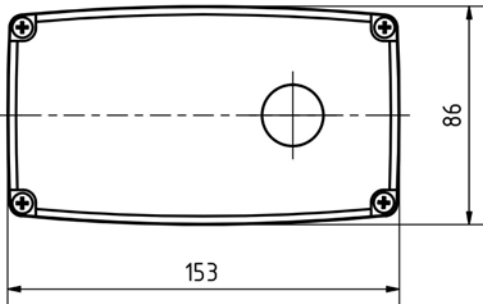
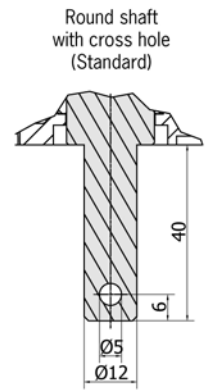
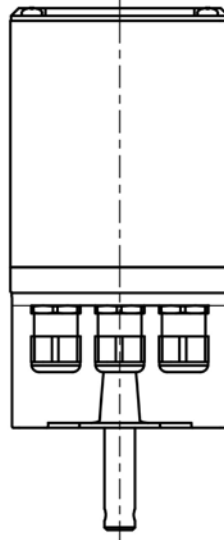
Dimensions

Nano+ S



Cable glands optional
(Standard=Blind plugs)

$H=73$ mm/ 102 mm,
depending on options



+ nano

Type	Torque [Nm]	Actuating time [s/90°]
Nano+ M 30-06	30	6
Nano+ M 30-12	30	12
Nano+ M 30-30	30	30
Nano+ M 30-60	30	60
Nano+ M 30-120	30	120
Nano+ M 40-09*	40	9
Nano+ M 40-12	40	12
Nano+ M 40-30	40	30
Nano+ M 40-60	40	60
Nano+ M 40-120	40	120
Nano+ M 50-20	50	20
Nano+ M 50-50	50	50
Nano+ M 50-90	50	90
Nano+ M 50-180	50	180
Nano+ M 60-20	60	20
Nano+ M 60-50	60	50
Nano+ M 60-90	60	90
Nano+ M 60-180	60	180

Other values upon request.

* Travel 10°...100°

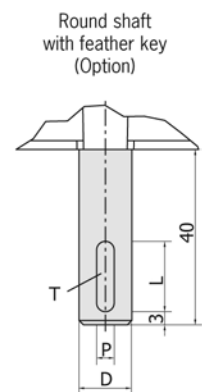
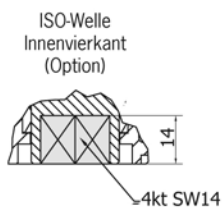
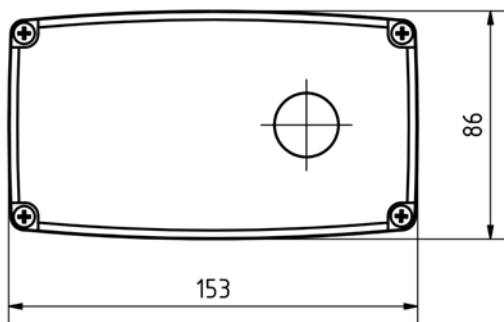
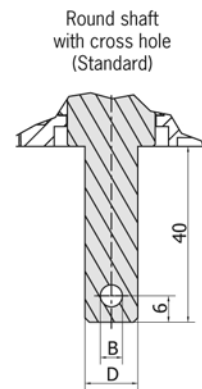
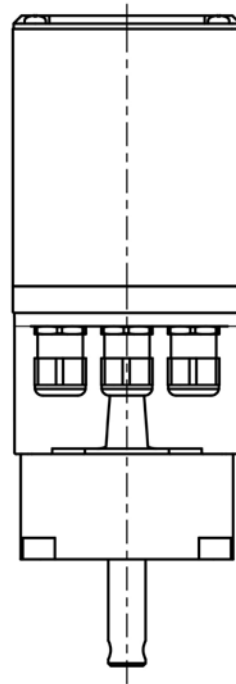
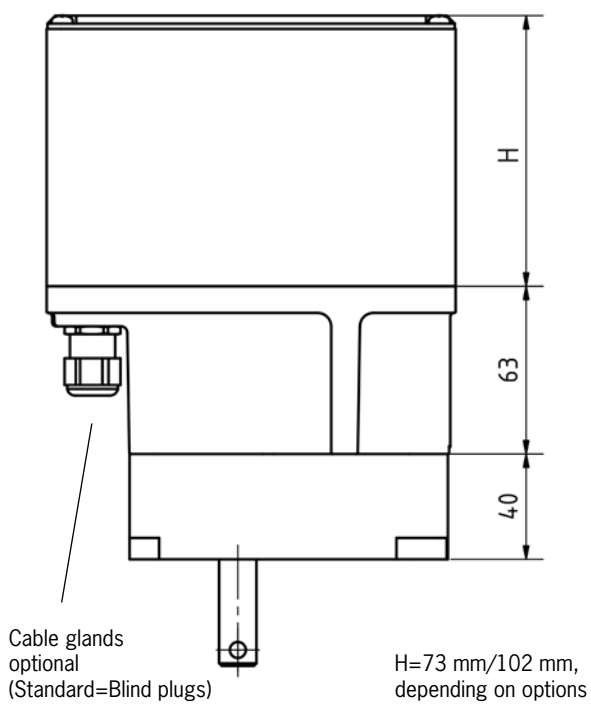
Specifications

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Ambient temperature	-15 °C...+60 °C/optional -40 °C...+80 °C (with PMR: 0 °C...+60 °C)
Housing	Alu die cast (EN AC-44200) powder-coated / Additional gear anodized alu
Gear	Metal
Cover	Aluminum EN AW-6060 T6
Shaft	1.4021
Position indicator	Optional
Power supply	230 V AC (optional 115 V AC/24 V AC)
Additional switches	2 or 4 (optional)
Potentiometer	Optional
Travel	30-40 Nm: 10°...150° / 50-60 Nm: 10°...100° (optional multi turn)
Duty cycle	100%
Connection	3 cable entries M16x1.5
Path cutoff	Switch cams/micro switches
Maintenance	Lifetime lubrication (maintenance free)
Control	3-point-step



Dimensions

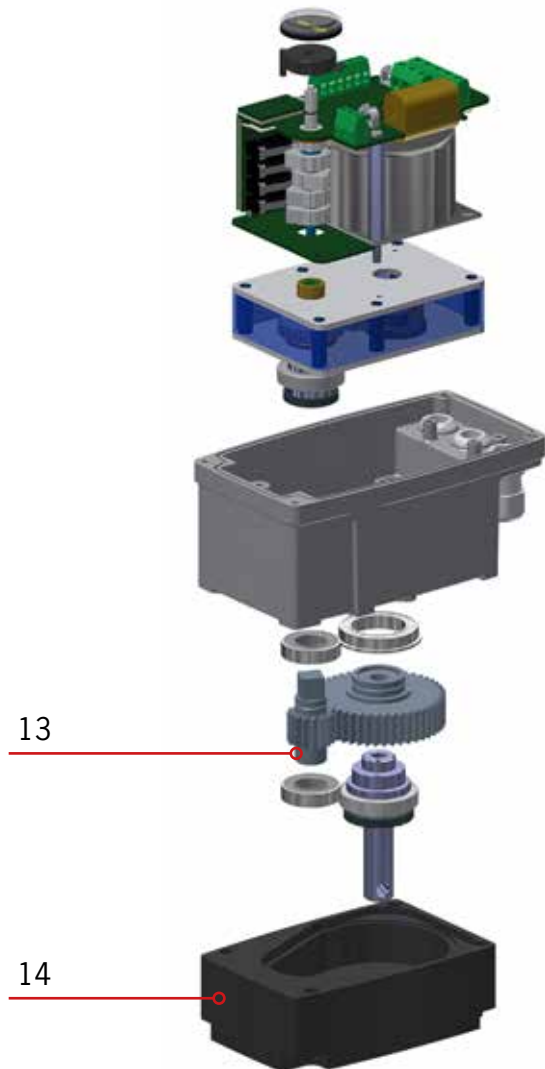
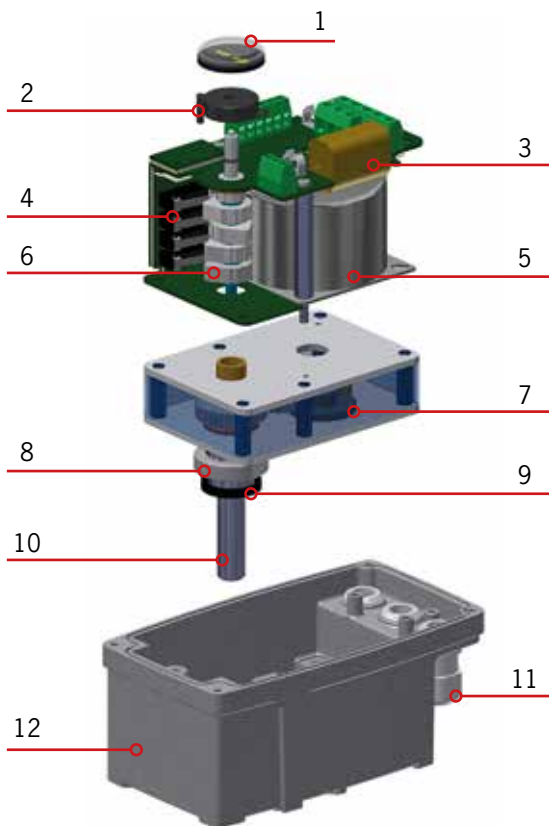
Nano+ M



Type	D	B	L	P	T
30-40 Nm	12	5	16	4	2,5
50-60 Nm	14	6	22	5	3

nano⁺ S

nano⁺ M



MADE IN GERMANY

1	Position indicator (optional)	8	Ball bearing
2	Hollow shaft potentiometer	9	Shaft sealing (optional)
3	Motor capacitor	10	Shaft
4	Limit switches	11	Cable entry (optional)
5	Synchronous motor	12	Alu die cast housing
6	Alu switch cams	13	Sub-mounted gear
7	Sandwich gear	14	Additional gear housing



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Subject to technical changes.

ARIS Stellantriebe GmbH