



Product features

- Wide torque range

- Wide range of positioning times

- Constant positioning times under fluctuating loads

- Max. two additional auxiliary position switches possible

- Electronic position controller integrated in actuator

- Wide selection of output shafts

- Custom shafts possible

- Solid metal housing

- Maintenance-free gearbox

- Operates in any position

Overview

The NL series is a favourably priced solution for applications in process plant engineering. The wide range of torques from 1 Nm through to 120 Nm ensures the NL series of actuators is a reliable solution for a multitude of applications.

The design of the housing made of die-cast aluminium and die-cast zinc in combination with a permanently lubricated gearbox made of steel

with sintered-bronze bearing bushes ensure their suitability for use in a broad range of temperatures and harsh operating environments.

Utilizing an (optional) ESR-NL electronic position controller can simplify integrating rotary and part-turn actuators into the controls of complex systems.



Product details

HOUSING

- Housing made of die-cast zinc
- Hood (height 92 mm) made of corrosion-resistant die-cast aluminium
- Coated with silicon-free paint
- Colour: RAL 7032 Pebble Grey
- Three cable entries M20x1.5
- Protection class IP54 to DIN EN 60529
- Options:
 - Protection classes IP65/IP66
 - Custom colours
 - Sealed with clear coating material and corrosion-preventative wax to improve corrosion resistance
 - Electric anti-condensate heater (helps prevent build-up of condensate in the actuator)

MOTOR

- Single-phase AC synchronous motor with permanent magnet, reversible
- 230 V \pm 10%, 50/60 Hz \pm 5%
- ON time 100% duty cycle on request
- Short start/stop times
- Insulation class B to VDE 0530
- Synchronous motors maintain speed and constant positioning times irrespective of the load
- Options:
 - Custom voltages
 - Custom frequencies

GEARBOX

- Spur gearing with straight-toothed steel gears integrated in housing
- Robust, maintenance-free
- Permanently lubricated gears
- Self-lubricating sintered bronze bearing
- Encapsulated version, operates in any position
- Internal release mechanism mechanically disengages coupling between motor and gearbox

OUTPUT SHAFT

8 Nm, 20 Nm, 40 Nm

- Output shaft with square socket WAF 14 mm (F05 to DIN ISO 5211)
- Options:
 - \varnothing 12 mm, with \varnothing 5 mm cross-hole
 - \varnothing 12 mm with feather key
 - Other output shafts on request

60 Nm, 80 Nm, 100 Nm, 120 Nm

- Output shaft with square socket WAF 17 mm (F07 to DIN ISO 5211)
- Options:
 - \varnothing 20 mm, with \varnothing 8 mm cross-hole
 - \varnothing 20 mm with feather key
 - Other output shafts on request

ELECTRICAL CONNECTION

- Connection terminals positioned centrally close to cable entry
- Screw-type terminals
- It is possible to retrofit up to two additional auxiliary position switches

CONTROLS

- Open/close signals
- Options:
 - Two additional potential-free switching contacts
 - Electronic position controller ESR-NL (integrated in actuator)
 - Potentiometer 200 Ω ... 10 k Ω

AMBIENT TEMPERATURE

- -15 °C to +60 °C
- 0 °C to +60 °C when utilizing electronic position controller ESR-NL
- Options:
 - Up to +80 °C, duty cycle S3-50%
 - Down to -40 °C

ANGLE OF ROTATION LIMITED BY SNAP-ACTION

POSITION OFF SWITCH

- Two limit switches (standard)
- All travel-dependent switches actuated by infinitely adjustable control cams
- No tools required to adjust control cams
- CO switches with silver-plated contacts
- Switch connections routed to terminal strip
- Max. switching capacity: 6 A, 250 V AC
- Option:

- Switches with gold-plated contacts

POSITION SENSOR FOR EXTERNAL POSITION INDICATION (OPTIONAL)

- With potentiometer

- Choice of wire-wound or conductive plastic potentiometer
- Multiturn potentiometer up to 10 turns
- It is possible to adapt the electrical angle of rotation of the potentiometer to the desired angle of rotation utilizing a gear train.
- Special potentiometers with TUV-approved form-fit attachment solution are available for electronic fuel/air ratio control.

- With 4 ... 20 mA transmitter

- Utilizing a gear train it is possible to adapt the electrical angle of rotation of the transmitter to the desired angle of rotation.

MECHANICAL POSITION INDICATOR (OPTIONAL)

- Position indicator on hood
- Graduated scale OPEN/CLOSED, 0° ... 90°, blank or to customer specification

MANUAL OPERATION (OPTIONAL)

- Using a handwheel it is possible to manually adjust the position of the output shaft and valve.
- Position switch-off setting is retained during manual operation.
- Handwheel remains motionless during electrical operation.

OPTIONS

- Other voltage/frequency
- Other ambient temperature range
- Higher protection class
- Handwheel
- Additional auxiliary position switches
- Custom control cams
- Electronic position controller
- Position sensor
- Anti-condensate heater
- On the spot mechanical position indicator
- Potentiometer
- Components to UL standard

INSTALLATION

- Easy to mount thanks to stable angle bracket/ISO bracket to DIN EN 5211
- No fuss coupling to valve stem by means of:
 - Hand-operated lever
 - Lever arm, clamping lever, ball-and-socket joint, connecting rods, sprung connecting rods
 - Flexible shaft coupling
 - Rigid shaft coupling

ORDER DETAILS

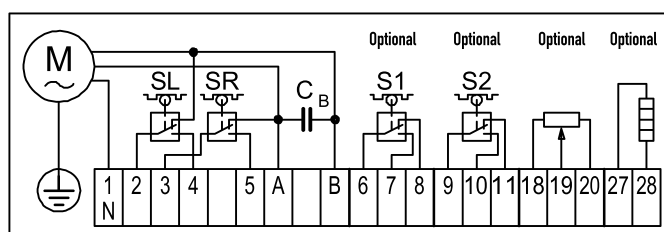
- Device type
- Torque
- Positioning time
- Output shaft type
- Operating voltage /frequency
- Desired options
- When ordering potentiometers:
 - Resistance value
 - Desired actuator angle of rotation
- Presetting information for position switches and potentiometer
- Or order number
- Desired valve, where applicable

ACTUATORS – NL SERIES, 230 V, 50(60) Hz (OPTIONAL: 115 V, 50(60) Hz)

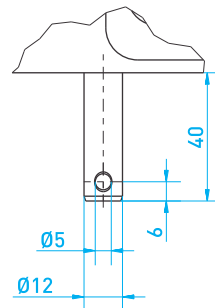
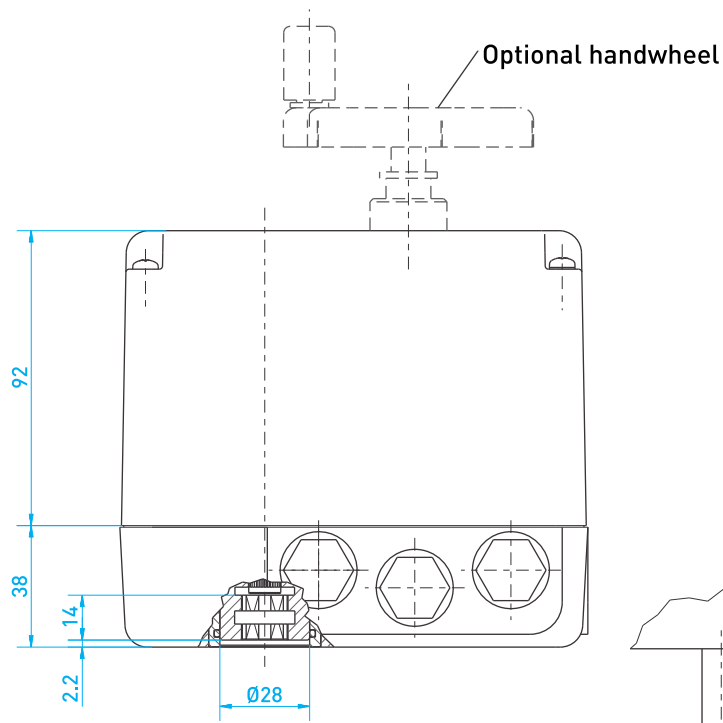
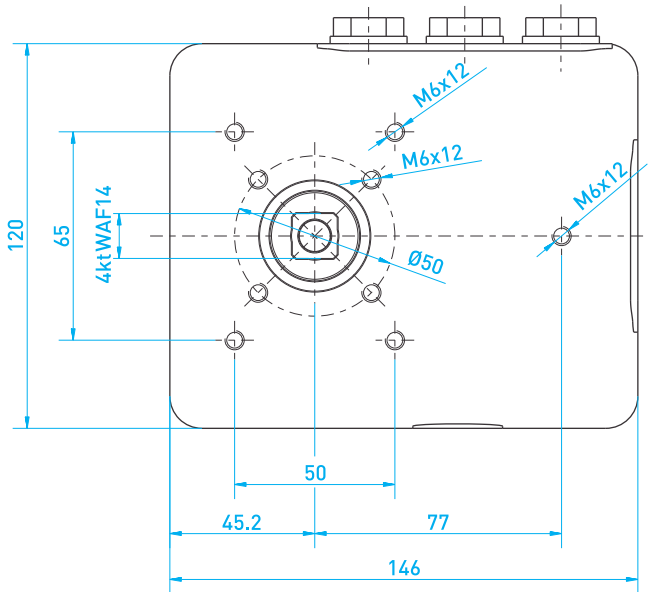
Type	Positioning time 90°	Torque	Power	Turning range	Shaft	Hood height	Weight	Order No.
NL 0608	6 s	8 Nm	18 VA	0 - 330°	F05/WAF14	92 mm	3.4 kg	5006
NL 1520	15 s	20 Nm	18 VA	0 - 330°	F05/WAF14	92 mm	3.4 kg	5015
NL 3020	30 s	20 Nm	18 VA	0 - 330°	F05/WAF14	92 mm	3.4 kg	5030
NL 6020	60 s	20 Nm	7 VA	0 - 330°	F05/WAF14	92 mm	3.1 kg	5060
NL 3040	30 s	40 Nm	18 VA	0 - 330°	F05/WAF14	92 mm	3.4 kg	5070
NL 6040	60 s	40 Nm	7 VA	0 - 330°	F05/WAF14	92 mm	3.5 kg	5071
Optionally up to 10 turns								
NL 45/60	45 s	60 Nm	18 VA	5 - 110°	F07/WAF17	92 mm	5.4 kg	5090
NL 18/80	18 s	80 Nm	31 VA	5 - 110°	F07/WAF17	92 mm	4.9 kg	5095
NL 45/100	45 s	100 Nm	18 VA	5 - 110°	F07/WAF17	92 mm	4.9 kg	5097
NL 45/120	45 s	120 Nm	31 VA	5 - 110°	F07/WAF17	92 mm	4.9 kg	5099
NL 90/100	90 s	100 Nm	18 VA	5 - 110°	F07/WAF17	92 mm	4.9 kg	5100
NL 90/120	90 s	120 Nm	31 VA	5 - 110°	F07/WAF17	92 mm	4.9 kg	5105

Optionally up to 3 turns

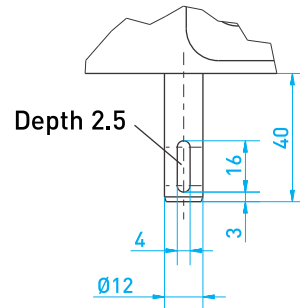
SCHEMATIC DIAGRAM STANDARD AC



Dimensions



Optional shaft coupling with drilled hole



Optional shaft coupling with feather key