CZSND®

SND Series

SND series intelligent non-invasive electric actuators



PROVIDE
SAFE,RELIABLE,
INTELLIGENT AND EFFICIENT
FLUID CONTROL EQUIPMENT

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企业官网

通过扫描铭牌上的二维码可以查询当前阀门电动装置的参数、调试方法视频、出厂时间、产品说明书、三维模型、特规要求等。

常州电站辅机股份有限公司
CHANGZHOU POWER STATION AUXILIARY EQUIPMENT CO., LTD.

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版次：2024年1月第一版第一次印刷300册

SND Series

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CZSND®



SND Series

Summary

SND series intelligent non-invasive electric actuator is a new generation of products developed and designed on the basis of the introduction of the latest international control technology. The product sets absolute encoder technology, sensor technology, bus control technology, infrared remote control technology, magnetic switch, data recording, power off LCD, wireless communication, cloud technology and other latest automatic control technology and advanced manufacturing technology as one of the intelligent products.

SND switch series products are a device to control the operation of the final control elements (such as valves) in the open loop control system, which is suitable for gate valves, globe valves, throttle valves, ball valves, butterfly valves and other types of on-off valves.

SND regulating series products are suitable for closed-loop control system of industrial process, and used with various regulating valves, by accepting regulating control signals, the implementation of fluid flow, pressure, temperature, liquid level and other process parameters for accurate control.

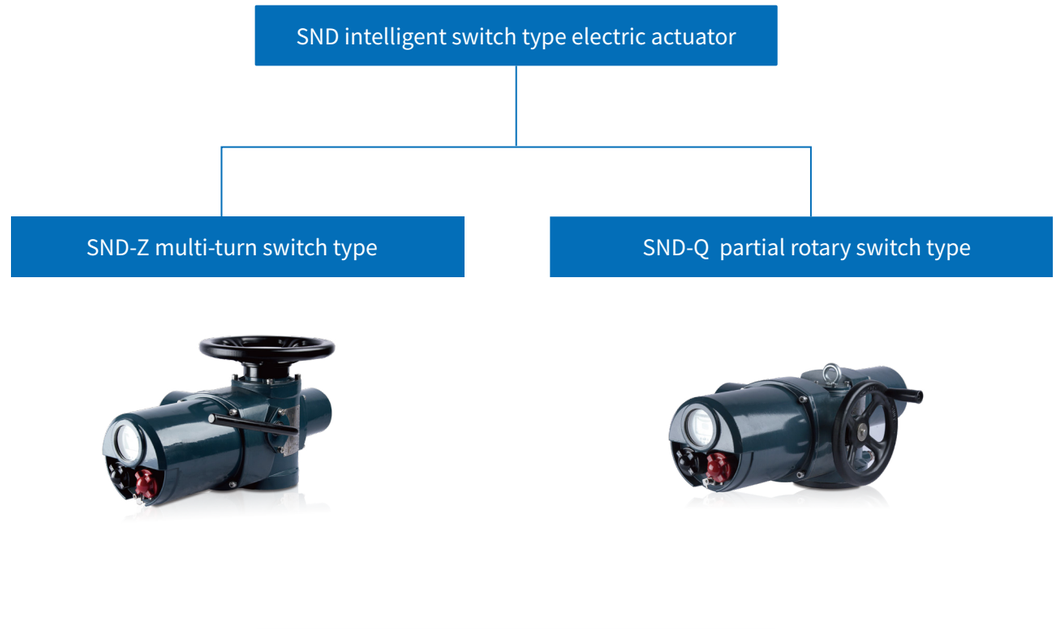


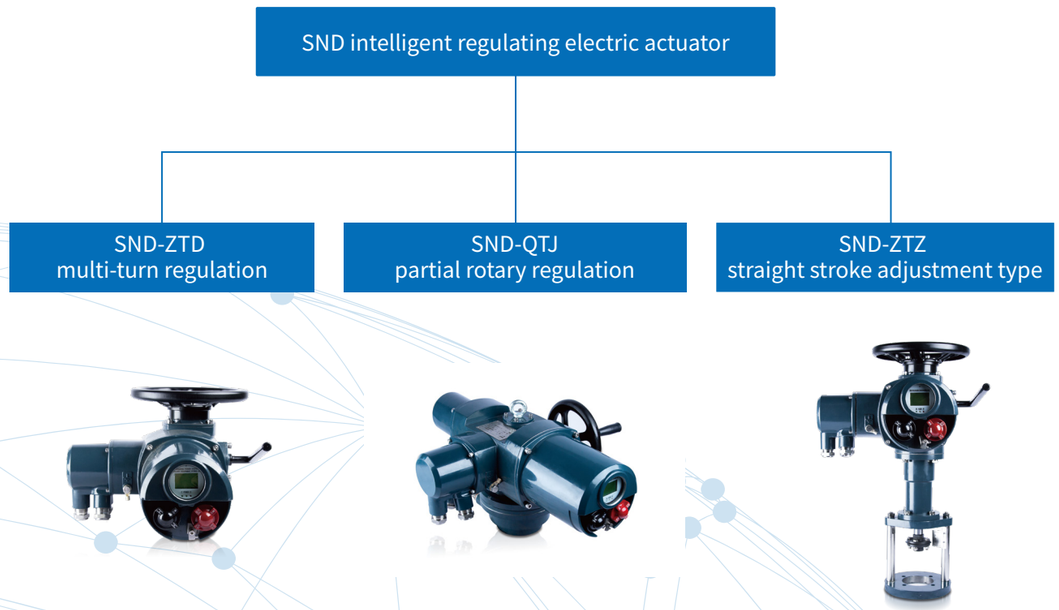
Product Features



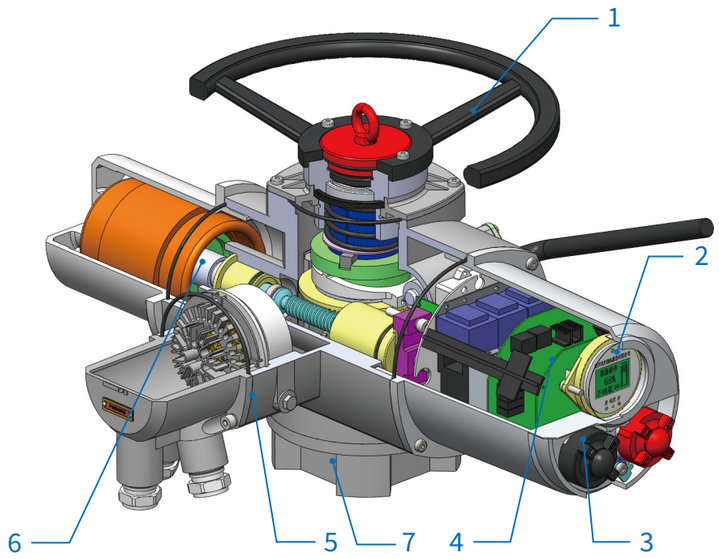
- Non-invasive design, no commissioning, simple and intuitive
- Full digital display of stroke and torque, accurate and reliable measurement
- Power off LCD display function
- Multiple language options, including Chinese and English
- Supports Modbus, Profibus, and HART bus communication
- Automatic phase sequence correction
- Displays the contact configuration function
- Password lock for status control
- Has dual speed (variable speed slow off) function
- Comprehensive real-time event recording and export capabilities
- Self-diagnosis and adaptive function
- Running troubleshooting
- motor overheat protection
- Instantaneous inversion protection
- Has two series of ordinary products and explosion-proof products
- Intelligent temperature control (optional)
- Lightning surge protection (optional)
- Wireless data communication function (optional)
- Cloud technology, Big Data storage and Analytics (optional)

Classification





Structure



1.Handwheel parts：

In the case of power failure, the handwheel can be directly driven (with a force-increasing mechanism on the larger model) to operate the actuator. When the hand/electric switch handle is switched to the manual state, it can automatically return to the initial position. Electric operation is always preferred.

2.Infrared setting：

Through the sealed indicator window, the full setting of the actuator can be completed without the need to open the electrical box cover on site and expose the internal control circuit.

3.On-site control：

Field control switch on and off knob and padlock field, remote control and setting knob operate the internal magnetic switch, avoiding the need to seal the through shaft against moisture.

4.Intelligent control system：

The intelligent control system has microcontroller, man-machine interface and isolated input and output. It also includes an absolute encoder electronic stroke controller and an electronic torque sensor with a pressure sensor. It can accurately measure, control and display the stroke and torque value of the actuator.

5.Junction box：

The outlet of the junction box adopts a more convenient and fast connector method. The individually sealed socket ensures the integrity of the actuator seal even when the junction box cover is opened for field wiring.

6.Motors and drives：

The motor shaft and worm are independent of each other for quick replacement. The low inertia, high torque motor allows the motor to quickly reach the peak torque after starting. There is a thermal protection switch embedded in the stator coil of the motor. When the stator coil of the motor reaches a certain temperature, the thermal protection switch will cut off the power supply naturally.

The worm and worm gear are operated separately immersed in lubricating oil to suit the maximum ambient temperature difference.

7.base：

The SND-Z series has two detachable bases, one for the thrust type products. The other is a buffer device selected when the valve is closed at high speed, which can also meet the compensation requirements of high temperature valves. Both bases allow the actuator to be removed without changing the valve position. Simple, detachable stem nuts and drive bushings can be machined to the stem for valve connection.

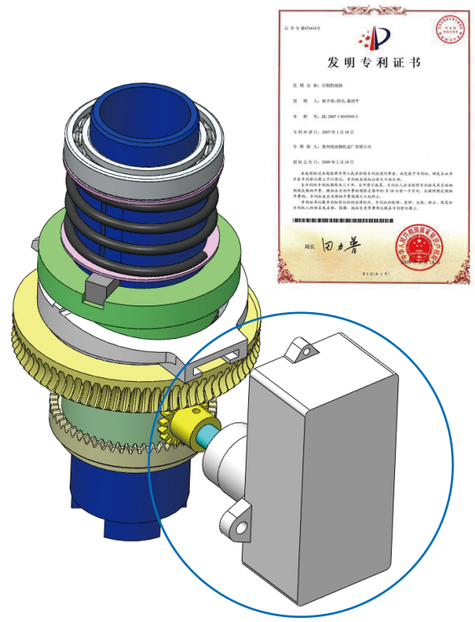
Features

Electronic stroke controller

SND products provide you with an original, accurate absolute coded electronic stroke controller, so that the positioning of valve stroke in process control is more accurate and reliable.

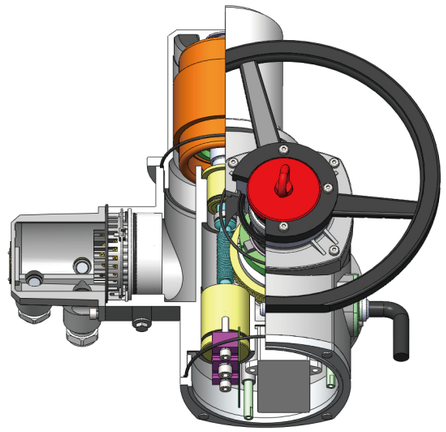
During the rotation of the controller, the mechanical drive is converted into binary gray code through the photoelectric sensor, and the identifiable stroke data is generated after the corresponding calculation by the system. The absolute coding technology makes the valve unique in any position of the full stroke, so the valve positioning is more accurate.

In the state of power failure, the manually operated actuator can still maintain the consistency of the travel data and the actual travel, so it has the break point memory.



Electronic moment controller

The SND actuator provides reliable and accurate torque measurement, providing good protection for the valve and actuator. When the electric actuator has a load, the torque sensor converts the output torque of the actuator directly into an electrical signal that can be recognized by the system, so as to obtain an accurate torque measurement value. Due to the use of a highly integrated signal amplifier chip, the influence of external interference such as electromagnetic radiation and temperature is reduced to a minimum. Thus the control precision of actuator torque is greatly improved.

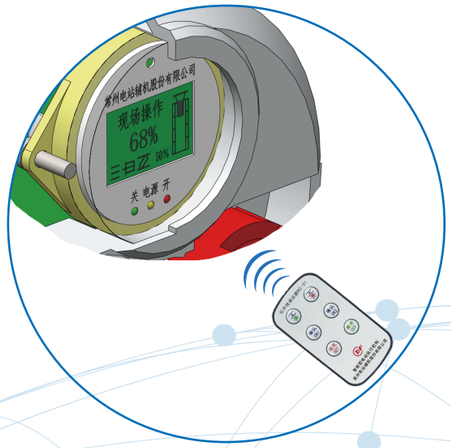


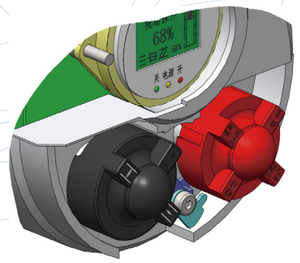
Easier debugging

SND series electric actuator is a new intelligent non-invasive product, without opening the cover of the electrical box, there are two ways for you to choose.

You can use the matching intrinsically safe infrared remote control RC-01 to adjust and set the torque value, travel limit, control mode and other parameters of the actuator in a simple, safe and rapid non-invasive manner. This advantage is more suitable for explosion-proof dangerous occasions.

You can also use the two knobs located on the cover of the electrical box to adjust and set the torque value, travel limit, control mode and other parameters of the actuator in a non-intrusive manner. The knobs are designed with magnetic control switch without through shaft.



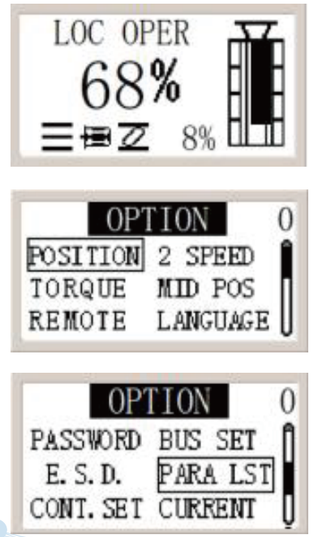


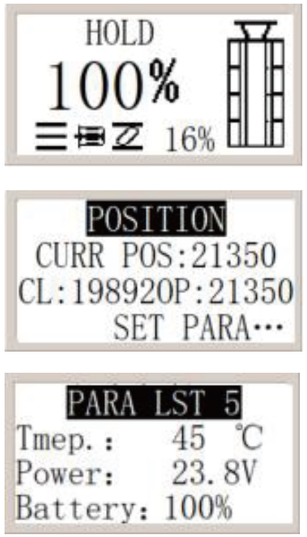
More intuitive debugging

SND series electric actuator adopts graphic dot-matrix LCD LCD screen to display torque, valve position opening, switch in place, control status, fault alarm, etc. in Chinese, digital, graphic and other ways. You can select Simplified Chinese or English based on the display requirements.

You can enter or site, or remote control, or project selection page through the knob on the cover of the electrical box according to your needs, in the project selection page you can select different items, enter different parameter setting pages, and accurately set the selected parameters or torque, or travel, or opening, or remote control mode. You can also select parameter query on the project page to query the previous parameter Settings. Parameters can be permanently saved in case of power failure.

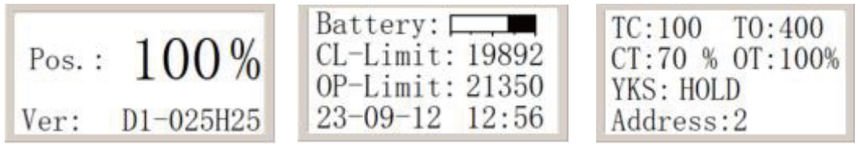
The red, green and yellow three indicators below the LCD display indicate the on, off and power status respectively, so that the user can intuitively understand the switching status of the valve at a distance.





Power off liquid crystal display

When the main power supply is disconnected, if the user still needs to know the parameters of the actuator, the power off LCD display function of the actuator can be used to wake up the control system by rotating the black knob on site, and the backup battery supplies power to the control system. The related parameters such as opening, version, and power can be read from the LCD screen. The battery is 3.7V rechargeable lithium battery, and the battery charging and discharging circuit is built into the actuator.



Profibus-DP Bus (Optional)

Profibus-DP is an international, open, manufacturer-independent field bus standard. Widely used in petroleum, petrochemical, water conservancy, electric power and other industrial automation fields. Due to its simple and robust physical layer (RS-485) and different service levels DP-V0 (periodic data exchange), DP-V1 (increased communication of non-periodic data), thus providing a viable solution for the realization of integrated factory automation and field equipment intelligence.

SND series electric actuator supports Profibus-DP bus and has the following features:

- Standard Profibus-DP driver interface, baud rate adaptive, maximum baud rate 12M;
- The communication modes are redundant DPV1, non-redundant DPV1, and DPV0.
- Connection mode: 9-pin D-type plug and terminal two ways;
- can connect up to 126 devices.

It has passed the test certification of China Guodian Group, ABB, Emerson and Xi 'an Thermal Engineering Institute, and has been registered in the international Fieldbus Association.


Certificate

PROFIBUS Nutzerorganisation e.V. grants to

Changzhou Power Station Auxiliary Equipment works Ltd.
NO.8 Fengli Road, Wulin Hi-Tech Industry Development Zone,
JiangSu Province, 213164 ChangZhou, China

the Certificate No: Z01842 for the PROFIBUS device:

Model Name: Non intrusive intelligent electric actuator
Revision: V1.2; SW:FW1: V1.0; HW: V2.0
GSD: SND10ECF.GSD, File Version: 5

This certificate confirms that the product has successfully passed the certification tests with the following scope:

DP-V0 MS0, Sync, Freeze, Fail_Safe
DP-V1 MS1, MS2, MM
Physical Layer RS485

Test Report Number: NCDL-2014-124-D
Authorized Test Laboratory: ITEL Beijing, China

The tests were executed in accordance with the following documents:
"Test Specifications for PROFIBUS DP Slaves, Version 3.0.9, September 2008".
This certificate is granted according to the document:
"Framework for testing and certification of PROFIBUS and PROFINET products".
For all products that are placed in circulation by March 31, 2017 the certificate is valid for life.

Board of PROFIBUS Nutzerorganisation e. V.


ABB

ABB Symphony Plus 控制系统兼容性证明

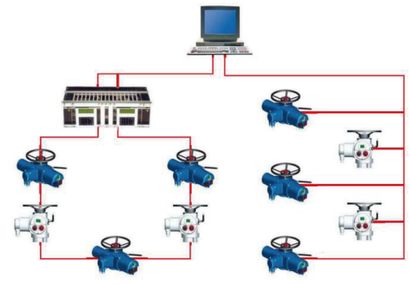
Modbus Bus (Optional)

Modbus is a relatively simple, versatile and versatile fieldbus protocol that provides all the services of factory automation (such as simple binary information, analog quantities, equipment parameters and diagnostic data exchange, etc.).

SND series electric actuator support

The Modbus-RTU bus has the following features:

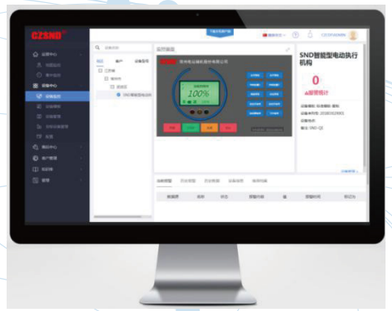
- RS485 (differential half-duplex) is used for the physical layer.
- Transmission rate 9.6 Kbit/s to 38.4 Kbit/s;
- Device address: 2 to 127 (optional).
- Redundant communication topology Optional
- Provides full control of the actuator and data feedback.



Cloud Technology (Optional)

Cloud technology refers to a hosting technology that integrates hardware, software, network and other resources in a wide area network or local area network to realize data calculation, storage, processing and sharing.

With the successful application of cloud technology in the SND series electric actuator, users can realize remote wireless debugging, operation, monitoring, diagnosis of the actuator, download, save and upload all the information of the actuator and other functions through the WEB side of the computer or the APP side of the mobile phone, which greatly facilitates user operation, debugging and diagnosis.







Flexible control

Field control

Two non-intrusive knobs are configured on the actuator's electrical control box cover, one is for on-site, remote control, disconnect, set selection, which can be padlocked in each position, and the other is for on, off, stop control.

Field control can also use the infrared remote control through the indicating window on the case cover for field, remote control, disconnect, setting selection and on, off, stop control.

Remote control

After the central control room is connected to the corresponding terminal of the actuator by hard wiring, the actuator can be controlled by switching quantity or analog quantity.

Switching quantity control: there are 4 inputs, namely opening valve, closing valve, stopping, emergency self-protection (ESD), remote control input are isolated. There are five control modes for remote control: self-holding, point-moving, double-wire on, double-wire off, emergency self-protection (ESD).

Analog control: The analog proportional controller built into the actuator enables it to accurately position the valve according to the analog signal given in the central control room.



Variable speed slow off function

When the valve is close to the full close position, it automatically reduces the speed and reduces the water hammer effect to achieve the purpose of protecting the valve. The user can do this by setting the knob in the field.

Field indication

The backlit LCD displays the opening value from full on to full off and the percentage torque value in digital and graphical form in increments of 1%. At the same time, it is also equipped with red, green and yellow LED indicators to indicate the on, off and power status respectively.

The LCD displays multiple ICONS, including status indicators for phase loss, motor overheating, overtorque failure, mechanical failure, automatic phase sequence correction, password protection, and more.

Status output

It is equipped with 8 status output relays and 1 monitoring relay, all of which are passive contacts, 4 of which can be configured in the field. Monitoring relays can monitor a variety of failures (power disconnection, phase loss, motor overheating, mechanical failure, selection anomalies); Eight state output relays are respectively output: field state, remote control state, full on, full off, middle position 1/2 (and on/off multiplexing, can only choose one), on over torque, off over torque. If you need more output contacts, please ask when ordering.

Analog valve position indication: The current valve position transmitter provides an isolated, contactless, internally powered, 4-20mA analog signal proportional to the valve position.

Data recording

The actuator has a built-in large-capacity data logger, and the recorded data will not be lost due to power disconnection or battery loss. Data loggers acquire and store data such as failure, valve position, field and remote operation, status and time:

Set parameters, operation times, maximum torque, field or remote control valve opening and closing, multiple failures, etc. Some data can be viewed directly on the LCD display, and more data can be downloaded to the PC for further analysis and processing through the data interface.

Comprehensive protection

In order to protect the safety and reliability of valves and actuators, SND products have built a comprehensive protection system.

1.Automatic phase sequence correction

SND has designed an automatic phase sequence correction circuit, which can automatically identify the phase sequence of three-phase AC power supply and adjust the actuator to run with the correct control command, effectively preventing valve damage caused by incorrect power wiring.

2.Phase loss protection

In order to prevent the motor from running out of phase, the intelligent control system monitors the three-phase power supply in real time, terminates the motor operation immediately if the power supply is out of phase, and sends an alarm signal on site and remotely.

3.Motor overheat protection

A thermal protection switch is installed in the motor coil to directly detect the temperature of the motor coil. If the motor overheats, the controller sends a signal to terminate the motor operation, and sends an alarm signal on site and remotely, and can recover itself after the temperature is normal.

4.Overmoment protection

If the valve is stuck during normal operation (the torque has passed), the intelligent control system will send a signal to terminate the motor operation and send an alarm signal on site and remotely.

5.Instantaneous reversal protection

When the actuator receives the instantaneous reversal signal, the control system will automatically delay the action after a period of time. To prevent impact load on the valve stem and gear box and other mechanical transmission device may cause damage.

6.Double seal - Double safety

As standard, all SND products are double-sealed to ensure that the actuator is dust and moisture resistant.

7.Control state protection

The SND actuator is equipped with two control state protection methods, you can use the mechanical lock on the lid of the electrical box to lock the actuator in remote control, field or off state to avoid misoperation. You can also enter the password setting menu of the actuator to set the password. Only by entering the correct password to change the control state or enter the setting interface. Product factory default no password.

8.Emergency Self-preservation (ESD)

Emergency self-protection (ESD) is the highest priority, and ESD commands can be executed whether the actuator is on-site, remotely controlled, disconnected or the motor is overheated. And the action mode can be set to: emergency open, emergency close or keep in place.



Main technical parameters

1. Power supply: three-phase three-wire 380VAC±10%, 50Hz±1%, harmonic content< 5%
   Optional power supply: 380 ~ 660VAC, 50Hz / 60Hz, please specify when ordering
2. Ambient temperature: -20 °C ~ +60 °C, optional temperature: -50°C ~ +70°C
3. Relative humidity: ⩽95% (25 °C)
4. Atmospheric pressure: 86kPa ~ 106kPa
5. Protection level: IP68 (underwater 7 meters 72 hours)
6. Explosion-proof class: Ex db II B T4 Gb and Ex db II C T4 Gb
7. Motor insulation class: F class
8. Output torque range: Multi rotation 50 ~ 20000N·m, Partial rotation 125 ~ 400000N·m
9. Analog output: 4 ~ 20mADC, load resistance ⩽750Ω 'm
10. Switching output: 9 sets of relay output contacts, contact capacity: 3A 250VAC,3A 30VAC
11. Field bus (optional) support: Modbus-RTU, Profibus-DP V0/V1, HART
12. The signal input and output channels adopt photoelectric isolation

On-off type:

1.Control mode: passive pulse signal or level signal, pulse signal duration ⩾500ms.

2.Motor working mode: S2 short-time working system, rated running time is 15 minutes.

Regulatory type:

1.Control mode: analog input signal is 4 ~ 20mADC, input impedance ⩽125Ω.

2.Working system and starting frequency: S5 system (intermittent working system, electric braking), minimum load duration rate of 25%, Maximum operation times 1200 times/hour.

3.The basic error is ⩽ ±1%, the return difference is ⩽ 1%, and the dead zone is adjustable from 0.5% to 9%.

Type description

On-off type:

□—□□□—□/□—□

- Optional functions: FM/FM2/FP/FP2/FH/TC FM is the MODBUS bus, FM2 is the redundant MODBUS bus,FP is the PROFIBUS-DP bus,FP2 is the redundant PROFIBUS-DP bus, FH is the HART protocol, TC is the intelligent temperature control, CC is the cloud technology
- B means explosion-proof type, no letter is ordinary type
- Output speed: r/min (RPM)
- Connection type: T for thrust type, I for power station type, no letter for conventional torque type
- Output torque: ×10 N·m
- Product type: Z means multi-rotation, Q means partial rotation
- Product series name, SND stands for intelligent non-invasive electric actuator

Regulatory type:

1	Product Type	SND-ZTZ: Straight stroke
		SND-ZTD: multi-turn
		SND-QTJ: Integral angular travel
2	Output torque or thrust	Straight stroke: Output thrust N
		Multi-turn and angular stroke: output torque ×10N·m
3	Output speed or rotational speed	Straight stroke: output speed mm/s
		Multi-turn and angular stroke: output speed r/min
4	Stroke or maximum number of turns	Straight stroke: stroke mm
		Multi-turn type: maximum number of turns, omitted without note
		Angular stroke: usually 90°, omitted without note
5	Turn-on times	Times/hour (less than 100,320,630,1200 four kinds)
6	Signal part	S: 4~20mA, omitted without note
7	Flameproof type sign	Flameproof type: B; Ordinary type: No letter
8	Optional function	FM/FM2: non-redundant/redundant MODBUS bus
		FP/FP2: Non-redundant/redundant Profibus-DP bus
		FH: HART protocol bus
		TC: Intelligent temperature control; CC: Cloud technology

SND-Z switch type technical parameter table

Type	Motor				Output Speed (r/min)										Thrust (KN)	Max.dia.of stem (mm)	Max. rotation (rev)	Hand ratio	Weight (kg)
	Type	Power (KW)	Rated Current (A)	Locked Current (A)	6	9	12	18	24	36	48	72	96	144	192					
					Nominal torque (N · m)															
SND-Z^{5}_{15} SND-Z^{5}_{15}B	$YDF_3$800-6 I	0.18	1.1	7.5			100,150									40	30 (32)	⩽1200	1	30～35
	$YDF_3$631-4 I	0.09	0.63	4				50												
	$YDF_3$632-4 I	0.12	0.74	5				80	50	50										
	$YDF_3$633-4 I	0.18	1.0	7				100	80	80	50									
	$YDF_3$800-4 I	0.25	1.4	9.5				150	100	100	80									
	$YDF_3$801-4 I	0.37	1.8	12					150	150	100									
	$YDF_3$802-4 I	0.55	2.4	16							150									
	$YDF_3$800-2 I	0.37	1.38	9.5								80	50							
	$YDF_3$801-2 I	0.55	1.86	13								120	100	80	50					
SND-Z^{20}_{40} SND-Z^{20}_{40}B	$YDF_3$801-6 II	0.25	1.42	9.5			250									100	44 (40)	⩽1200	1	40～50
	$YDF_3$802-6 II	0.37	1.96	13			350													
	$YDF_3$801-4 II	0.37	1.8	12				300	250											
	$YDF_3$802-4 II	0.55	2.4	16				400	350	300	250									
	$YDF_3$901-4 II	0.75	2.8	19					400	400	300									
	$YDF_3$802-2 II	0.75	2.4	16								150	120	100	80					
	$YDF_3$901-2 II	1.1	3.3	23								250	200	150	120					
SND-Z^{45}_{60} SND-Z^{45}_{60}B	$YDF_3$100M-6III	0.75	3.11	21			600									150	50	⩽1200	2.829	100～130
	$YDF_3$100M1-4III	0.75	2.8	19				450												
	$YDF_3$100M2-4III	1.1	4	28				600	450	450										
	$YDF_3$100L1-4III	1.5	5	35					600	600	450									
	$YDF_3$100L2-4III	2.2	7	49							600									
	$YDF_3$100L-2III	2.2	6.3	44								450	300	300						
	$YDF_3$112M1-2III	3	7.8	54								600	450	450	300					
	$YDF_3$112M2-2III	4	9.7	67									600	600	450					
	$YDF_3$112L-2III	5.5	13.3	93											600					
SND-Z^{90}_{120} SND-Z^{90}_{120}B	$YDF_3$100L1-6III	1.1	4.2	29			900									200	60	⩽1200	4.3	120～170
	$YDF_3$100L2-6III	1.5	5.7	39			1200													
	$YDF_3$100L1-4III	1.5	5	35				900												
	$YDF_3$100L2-4III	2.2	7	49				1200	900	900										
	$YDF_3$112L1-4III	3	9	63					1200	1200	900									
	$YDF_3$112L2-4III	4	11.9	83							1200									
	$YDF_3$112M2-2III	4	9.7	67								900								
	$YDF_3$112L-2III	5.5	13.3	93								1200	900	900						
	$YDF_3$132L1-2III	7.5	17.1	119									1200	1200	900					
	$YDF_3$132L2-2III	10	22.8	159											1200					

Note: (1) The starting current and maximum current of the motor are about 7 times the rated value, and it is normal for the current to be too large during operation.

(2) The data in brackets in the maximum valve stem diameter column is used for medium-speed buffer type thrust disk and high-speed buffer type thrust disk.

SND-Q switch type technical parameter table

Basic type

Type	Motor				Output Speed r/min			Time for 90 rotate S	Hand ratio	Dia.of stem mm	Weight kg
	Type	Power kW	Current A		1	3	5				
			Rated	Locked	Torque N·m						
SND-Q$^{12.5}_{40}$(/B)	YDF$_3$802-12 I	0.09	0.91	6.3	125,250,400			1r为15S 3r为5S 5r为3S	83	125N·m为22，其余为28	40
	YDF$_3$631-4 I	0.09	0.63	4		125,250					
	YDF$_3$632-4 I	0.12	0.74	5		400	125,250				
	YDF$_3$633-4 I	0.18	1.0	7			400				

Basic stack 1 reducer

Type	Motor				Output Speed r/min			Time for 90 rotate S	Hand ratio	Dia.of stem mm	Weight kg
	Type	Power kW	Current A		0.6	1	1.5				
			Rated	Locked	Torque N·m						
SND-Q$^{50}_{100}$(/B)	YDF$_3$631-4 I	0.09	0.63	4	500,1000			0.6r为25S 1r为15S 1.5r为10S	0.6r和1r为401，1.5r为278	500N·m为42，1000N·m为50	50
	YDF$_3$631-4 I	0.09	0.63	4		500					
	YDF$_3$632-4 I	0.12	0.74	5		1000	500				
	YDF$_3$633-4 I	0.18	1.0	7			1000				

Basic stack 2 reducer

Type	Motor				Output Speed r/min		Time for 90 rotate (S)	Hand ratio	Dia.of stem (mm)	Weight kg
	Type	Power kW	Current A		0.6	1				
			Rated	Locked	Torque N·m					
SND-Q$^{150}_{200}$(/B)	YDF$_3$631-4 I	0.09	0.63	4	1500		0.6r为25S 1r为15S	414	60	70-75
	YDF$_3$632-4 I	0.12	0.74	5	2000	1500				
	YDF$_3$633-4 I	0.18	1.0	7		2000				

Basic stack 3 reducer

Type	Motor				Output Speed r/min	Time for 90 rotate (S)	Hand ratio	Dia.of stem (mm)	Weight kg
	Type	Power kW	Current A		0.5				
			Rated	Locked	Torque N·m				
SND-Q$^{300}_{400}$(/B)	YDF$_3$633-4 I	0.18	1.0	7	3000/4000	0.5r为30S	830	80	85-95

Explanation:

1.There are two speed ratios of the No. 1 reducer, 4.84 and 3.36, and the speed ratio of the No. 2 reducer is 5 and the speed ratio of the No.3 reducer is 10.

2. In the motor, YDF$_3$8002-12I is a 12-pole motor, and the rest are 4-pole. The starting current and maximum current of the motor are about 7 times the rated value shown in the table, and it is normal for the current to be too large during operation.

3. The valve stem diameter in the table is d1 in the size table, which is the maximum value of the corresponding specification. If the user needs other values, it should be put forward when ordering.

The composition and technical parameters of SND series product superposition reducer

Technical Specifications for SND series multi-turn products with output torques of 1800N·m and 2500N·m

The first stage actuator					Reducer			Actuator superposition reducer	
Type	Motor type	Power kW	Rated current A	Locked current A	Type	Composition	Ratio	Output speed r/min	Output torque N.m
SND-Z90-18(/B)D	YBDF$_3$100L1-4III	1.5	5	35	Z180	XJ3C	2.67	6	1800
SND-Z90-24(/B)D	YBDF$_3$100L1-4III	1.5	5	35				9	
SND-Z90-36(/B)D	YBDF$_3$100L2-4III	2.2	7	49				14	
SND-Z90-48(/B)D	YBDF$_3$100L2-4III	2.2	7	49				18	
SND-Z90-72(/B)D	YBDF$_3$112M1-2III	3	7.8	54				27	
SND-Z90-96(/B)D	YBDF$_3$112M2-2III	4	9.7	67				36	
SND-Z90-144(/B)D	YBDF$_3$112L-2III	5.5	13.3	93				54	
SND-Z90-192(/B)D	YBDF$_3$132L1-2III	7.5	17.1	119				72	
SND-Z120-18(/B)D	YBDF$_3$100L1-4III	1.5	5	35	Z250			6	2500
SND-Z120-24(/B)D	YBDF$_3$100L2-4III	2.2	7	49				9	
SND-Z120-36(/B)D	YBDF$_3$100L2-4III	2.2	7	49				14	
SND-Z120-48(/B)D	YBDF$_3$112L1-4III	3	9	63				18	
SND-Z120-72(/B)D	YBDF$_3$112M2-2III	4	9.7	67				27	
SND-Z120-96(/B)D	YBDF$_3$112L-2III	5.5	13.3	93				36	
SND-Z120-144(/B)D	YBDF$_3$132L1-2III	7.5	17.1	119				54	
SND-Z120-192(/B)D	YBDF$_3$132L2-2III	10	22.8	159				72	

Note: 1. The first stage electric actuator is SND-Z large hole output shaft type electrical assembly, D represents large hole.

2. If it is thrust type, the thrust type plate can be superimposed under the reducer, the model is Z250T.

3. Order torque 2500N·m, output speed 72r/min, thrust type; It should be named as SND-Z120-192/BD+Z250T.

Technical specifications for SND series multi-turn products with output torques of 3500N·m and 5000N·m

The first stage actuator				Reducer			Actuator superposition reducer	
Type	Power kW	Rated current A	Locked current A	Type	Composition	Ratio	Output speed r/min	Output torque N.m
SND-Z90-24(/B)	2.2	7	49	Z350	ZJ500	4	6	3500
SND-Z90-36(/B)	2.2	7	49				9	
SND-Z90-48(/B)	3	9	63				12	
SND-Z90-72(/B)	4	9.7	67				18	
SND-Z90-96(/B)	5.5	13.3	93				24	
SND-Z90-144(/B)	5.5	13.3	93				36	
SND-Z90-192(/B)	7.5	17.1	119				48	
SND-Z120-24(/B)	3	9	63	Z500			6	5000
SND-Z120-36(/B)	3	9	63				9	
SND-Z120-48(/B)	4	11.9	83				12	
SND-Z120-72(/B)	5.5	13.3	93				18	
SND-Z120-96(/B)	7.5	17.1	119				24	
SND-Z120-192(/B)	10	22.8	159				36	

Note: 1. When the output torque is 5000N·m, the opening setting torque of the first stage electric actuator is 1250N·m, and the closing setting torque is 875N·m.

2. If it is thrust type, the thrust type plate can be superimposed under the reducer, the model is Z500T.

3. Order torque 5000N·m, output speed 24r/min, thrust type; It should be named as SND-Z120-96+Z500T.

Technical specifications for SND series multi-turn products with output torques of 8000N·m and 10000N·m

The first stage actuator				reducer			Actuator superposition reducer	
Type	Power kW	Rated current A	Locked current A	Type	Composition	Ratio	Output speed r/min	Output torque N.m
SND-Z100-48(/B)	4	11.9	83	Z800	ZJ1000	8.13	6	8000
SND-Z100-72(/B)	5.5	13.3	93				9	
SND-Z100-96(/B)	7.5	17.1	119				12	
SND-Z100-144(/B)	7.5	17.1	119				18	
SND-Z100-192(/B)	10	22.8	159				24	
SND-Z120-48(/B)	4	11.9	83	Z1000			6	10000
SND-Z120-72(/B)	5.5	13.3	93				9	
SND-Z120-96(/B)	7.5	17.1	119				12	
SND-Z120-144(/B)	7.5	17.1	119				18	
SND-Z120-192(/B)	10	22.8	159				24	

Note: 1. If it is thrust type, the thrust type plate can be superimposed under the reducer, the model is Z1000T.
2. Order torque 10000N·m, output speed 24r/min, thrust type; It should be expressed as SND-Z120-192+Z1000T.

Technical specifications for SND series multi-turn products with output torques of 14000N·m and 20000N·m

The first stage actuator				Reducer			Actuator superposition reducer	
Type	Power kW	Rated current A	Locked current A	Type	Composition	Ratio	Output speed r/min	Output torque N.m
SND-Z180-72G	7.5	17.1	119	Z1800	ZJ2000	10	6	18000
SND-Z180-72G	7.5	17.1	119	Z1400		8	9	14000
SND-Z180-96G	10	22.8	159				12	
SND-Z180-144G	12.5	25	175				18	
SND-Z200-192G	18.5	38	266	Z1600			24	16000
SND-Z250-72G	10	22.8	159	Z2000			9	20000
SND-Z250-96G	12.5	25	175				12	
SND-Z250-144G	18.5	38	266				18	

Note: 1. The first level electric actuator in the table is SND-Z high-speed DENso, G indicates high-speed.
2. If it is thrust type, the thrust type plate can be superimposed under the reducer, the model is Z2000T.
3. Order torque 20000N·m, output speed 18r/min, thrust type; It should be expressed as SND-Z250-144G+Z2000T.

Technical parameter table of SND series partial rotary products with output torque of 2000N·m ~ 400000N·m

The first stage actuator				Reducer			Actuator superposition reducer		
Type	Power kW	Rated current A	Locked current A	Type	Composition	Ratio	Output Speed r/min	Time for 90 rotate(S)	Output torque N.m
SND-Z20-18(/B)	0.37	1.8	12	DQ200	DJ1A	37	0.48	30.8	2000
SND-Z30-18(/B)	0.37	1.8	12	DQ400	DJ2A	57	0.316	47.5	4000
SND-Z40-18(/B)	0.55	2.4	16	DQ600	DJ2A	57	0.316	47.5	6000
SND-Z45-18(/B)	0.75	2.8	19	DQ800	DJ3A	55	0.327	45.8	8000
SND-Z60-18(/B)	1.1	4.0	28	DQ1000	DJ3A	55	0.327	45.8	10000
SND-Z90-18(/B)	1.5	5.0	35	DQ1600	DJ4A	58	0.31	48.3	16000
SND-Z120-18(/B)	2.2	7.0	40	DQ2000	DJ4A	58	0.31	48.3	20000
SND-Z120-48(/B)D	3.0	9.0	63	DQ$^{3200}_{4000}$II	XJ3C+DJ5A	2.67×54	0.333	45	$^{32000}_{40000}$
SND-Z120-48(/B)D	3.0	9.0	63	DQ6300 II	XJ3C+DJ6A	2.67×69	0.26	57.5	63000
SND-Z90-72(/B)	4.0	9.7	67	DQ8000 II	XJ4A+DJ6A	4×69	0.26	57.5	80000
SND-Z90-96(/B)D	4.0	9.7	67	DQ12500III	XJ3C+XJ4B+DJ7A	2.67×2.67×80	0.168	89	125000
SND-Z120-96(/B)D	5.5	13.3	93	DQ16500III	XJ3C+XJ4B+DJ7A	2.67×2.67×80	0.168	89	165000
SND-Z120-96(/B)D	5.5	13.3	93	DQ25000III	XJ3C+XJ5A+DJ8A	2.67×4.138×84	0.104	145	250000
SND-Z120-72(/B)	5.5	13.3	93	DQ40000	DJ9A	1312	0.055	273	400000

Note: 1. In the reducer, XJ is a planetary reducer, and DJ is a worm gear reducer (worm gear pairs are right-handed and self-locking).
2. Order torque 250000N·m, output speed 0.104r/min; Should represent SND-Z120-96/BD+ DQ25000III.
3. If you need different output speed from the table, please consult with the company.

SND-ZTZ straight stroke adjustment type technical parameter table

Type		SND-ZTZ1				SND-ZTZ2		SND-ZTZ3		
Output Thrust N		4000	6300	10000	16000	25000	40000	50000、60000	80000	100000
Setting the torque N·m		30	40	50	80	150	200	300	400	450
Travel mm		80;40				120;60		160;80	160;130;80	
Output Speed mm/s		1.5 mm/s (18r/min)				1.8 mm/s (18r/min)		1.8 mm/s (18r/min)	1.2 mm/s (18r/min)	
Regulating Motor	Type	YDTF$_3$801-4I			YDTF$_3$802-4I	YDTF$_3$901-4 II		YDTF$_3$100L2-4III	YDTF$_3$112L1-4III	
	Power	0.25kW			0.37kW	0.55kW		1.5kW	2.2kW	
	Rated/Locked current	0.62A/2.5A			1.22A/4.9A	1.5A/6A		3.65A/14A	6.1A/24A	
Weight kg		50			58	78		140	148	

SND-ZTD multi-rotation control type technical parameter table

Type	Motor				Output Speed r/min		Max.dia. of stem (mm)	Max. rotation (rev)	Hand ratio	Weight (kg)
	Type	Power kW	Current A		18	24				
			Rated	Locked	Torque N·m					
SND-ZTD$^{5}_{8}$(/B)	YDTF$_3$801-4I	0.25	0.62	2.5	50	35	30	⩽1200	1	30～35
	YDTF$_3$802-4I	0.37	1.22	4.9	80	60				
SND-ZTD$^{10}_{20}$(/B)	YDTF$_3$802-4 II	0.37	1.22	4.9	100	75	44	⩽1200	1	40～50
	YDTF$_3$901-4 II	0.55	1.5	6.0	200	150				
SND-ZTD$^{30}_{45}$(/B)	YDTF$_3$100L2-4 III	1.5	3.65	14	300	250	50	⩽1200	2.8	100～130
	YDTF$_3$112L1-4 III	2.2	6.1	24	450	300				
SND-ZTD$^{60}_{90}$(/B)	YDTF$_3$112L1-4 III	2.2	6.1	24	600	450	60	⩽1200	4.3	120～170
	YDTF$_3$112L2-4 III	3.0	8.2	40	900	600				

SND-QTJ (integral) Angle stroke adjustment type technical parameter table

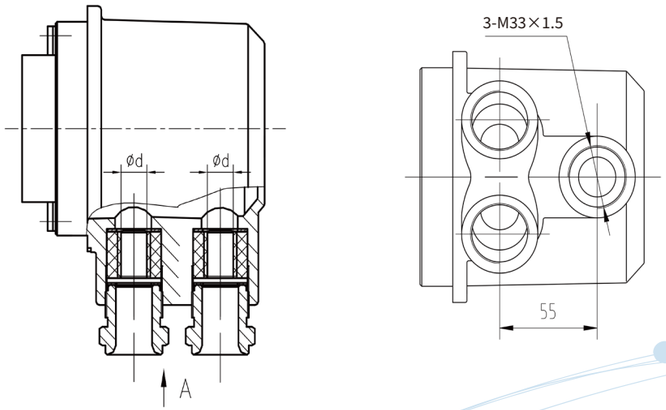
Type	Motor				Torque N·m	Output Speed r/min	Hand Ratio	Speed ratio of worm gear	Additional reducer and speed ratio
	Type	Power kW	Current A						
			Rated	Locked					
SND-QTJ12.5(/B)	YDTF$_3$802-12 I	0.06	0.51	2.0	125	1 (15S)	82.9	93	
SND-QTJ25(/B)	YDTF$_3$802-12 I	0.06	0.51	2.0	250	1 (15S)	82.9	93	
SND-QTJ50(/B)	YDTF$_3$633-4 I	0.12	0.39	1.5	500	0.6 (25S)	401	93	1号4.84
SND-QTJ100(/B)	YDTF$_3$633-4 I	0.12	0.39	1.5	1000	0.6 (25S)	401	93	1号4.84
SND-QTJ200(/B)	YDTF$_3$802-4 I	0.37	1.22	4.9	2000	0.6 (25S)	414	93	2号5.0
SND-QTJ300(/B)	YDTF$_3$802-4 I	0.37	1.22	4.9	3000	0.5 (30S)	829	57	3号10.0

Technical parameters of angular stroke series products with output torque of 1000N·m ~80000N·m

The first stage actuator			Reducer			Actuator superposition reducer		
Type	Power kW	Current A	Type	Composition	Ratio	Output Speed r/min	Time for 90 rotate(S)	Output torque N.m
SND-ZTD10-18(/B)	0.37	1.22	DQTJ100	DJ1A	37	0.48	30.8	1000
SND-ZTD20-18(/B)	0.55	1.5	DQTJ200	DJ2A	57	0.316	47.5	2000
SND-ZTD45-18(/B)	2.2	6.1	DQTJ400	DJ3A	55	0.327	45.8	4000
SND-ZTD60I-18(/B)	2.2	6.1	DQTJ600	DJ3A	55	0.327	45.8	6000
SND-ZTD90-18(/B)	3.0	8.2	DQTJ800	DJ4A	58	0.31	48.3	8000
SND-ZTD90-18(/B)	3.0	8.2	DQTJ1000	DJ4A	58	0.31	48.3	10000
SND-ZTD30-18(/B)	1.5	3.65	DQTJ $^{1600}_{2000}$ II	XJ3A+DJ5A	4.14×54	0.08	186	$^{16000}_{20000}$
SND-ZTD60I-18(/B)	2.2	6.1	DQTJ $^{3200}_{4000}$ II	XJ3A+DJ5A	4.14×54	0.08	186	$^{32000}_{40000}$
SND-ZTD90-18(/B)	3.0	8.2	DQTJ6300 II	XJ4A+DJ6A	4×69	0.065	230	63000
SND-ZTD90-18(/B)	3.0	8.2	DQTJ8000 II	XJ4A+DJ7A	4×80	0.054	275	80000

Notes:1.if it is flameproof type, the end of the model needs to add "/B", such as SND-ZTD90-18/B+DQTJ8000 II.
2.The starting current and maximum current of the motor are about 7 times the rated value shown in the table, and it is normal for the current to be too large during operation.

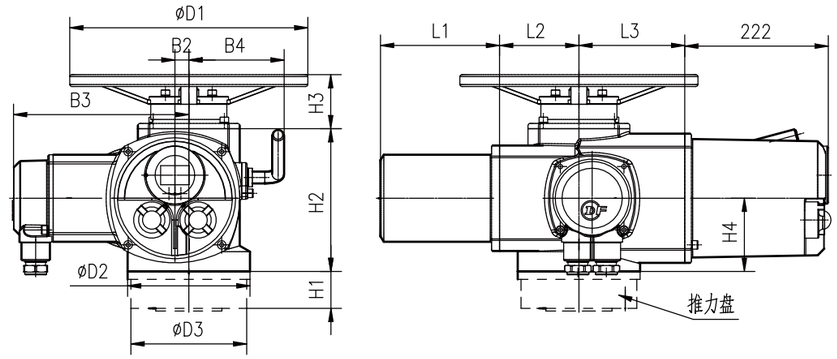
Electrical interface



Each actuator has three cable lead-in devices, and The diameter of the cable through which the seal in the lead-in device allows passage be ϕd of ϕ15mm and ϕ19mm.

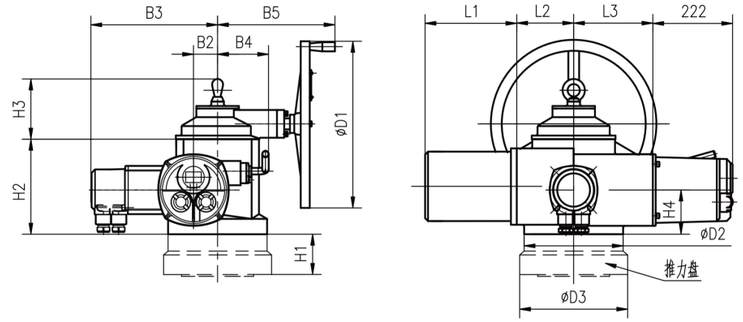
SND-Z and SND-ZTD series dimensions and connection dimensions

Torque type connection size



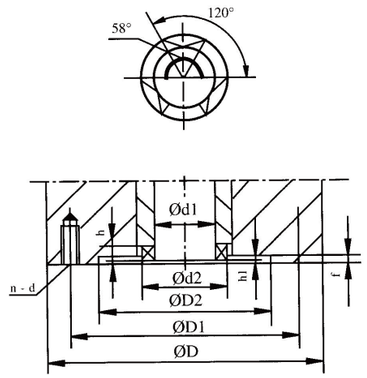
Dimensions SND-Z5 ~ SND-Z60 and SND-ZTD5 ~ SND-ZTD45

Type	L1	L2	L3	H1	H2	H3	H4	B2	B3	B4	D1	D2	D3
SND-Z $^{5}_{15}$	145,180	110	145	46(69,89)	214	80	108	21	288	144	280	145	126
SND-ZTD $^{5}_{8}$													
SND-Z $^{20}_{40}$	180,190	120	160	56(89,118)	217	83	111	21	313	144	380	185	175
SND-ZTD $^{10}_{20}$													
SND-Z $^{45}_{60}$	200~285	148	239	80(117,140)	245	100	118	55	325	142	420	225	210
SND-ZTD $^{30}_{45}$													

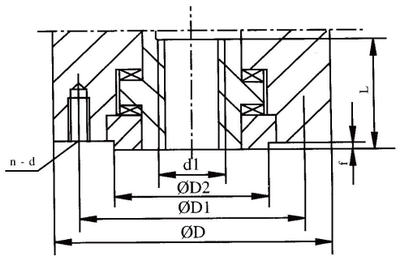


Dimensions of SND-Z $^{90}_{120}$ and SND-ZTD $^{60}_{90}$

Type	L1	L2	L3	H1	H2	H3	H4	H5	B2	B3	B4	B5	D1	D2	D3
SND-Z $^{90}_{120}$ SND-ZTD $^{60}_{90}$	255~397	158	263	110(151,190)	260	165	121		67	357	142	343	450	275	300



Torque type connection size (JB2920)



Thrust type connection dimensions (ISO5210)

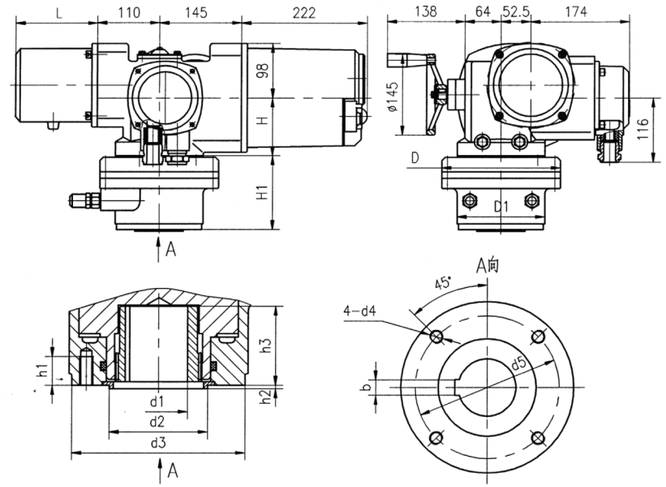
SND-Z and SND-ZTD series actuator connection dimension table

Type	Torque type (JB2920-81)										Thrust type (ISO5210=GB12222)							
	Frame Type	d1	d2	D2 (H9)	n-d	D1	D	h1	h	f	Flange Type	D	D1	D2 (f8)	d1	n-d	L	f
SND-Z $^{5}_{15}$ SND-ZTD $^{5}_{8}$	2	33	44	90	4-M10	120	145	2	8	4	F10	126	102	70	T30 (32)	4-M10	40 (62,75)	3
	2I	26	39	75	4-M8	95	115	2	6	4								
SND-Z $^{20}_{40}$ SND-ZTD $^{10}_{20}$	3	42	58	125	4-M12	160	185	2	10	4	F14	175	140	100	T44 (40)	4-M16	50 (82,101)	4
	3I	32	45	90	4-M10	120	145	2	8	4								
SND-Z $^{45}_{60}$ SND-ZTD $^{30}_{45}$	4	52	72	150	4-M16	195	225	2	12	5	F16	210	165	130	T50	4-M20	80 (108,133)	5
SND-Z $^{90}_{120}$ SND-ZTD $^{60}_{90}$	5	62	82	180	4-M20	235	275	2	14	5	F25	300	254	200	T60	8-M16	114 (140,168)	5
	5I	52	72	150	4-M16	195	230	2	12	5								

Explanation:

1. If it is flameproof type, the end of the model needs to add /B, such as SND-Z$^{45}_{60}$/B;
2. The I in the frame number indicates the power station type;
3. The position of the thread mounting hole is staggered symmetrical with the motor axis;
4. The effective depth of the thread mounting hole is not less than 1.8 times the nominal diameter of the thread.
5. The high speed electric actuator exists across models, see SND-Z switch type series technical parameter table for details.
6. The size in the brackets of thrust type d1 in the table is the maximum valve stem diameter that the medium speed buffer thrust disk and the high speed buffer thrust disk are allowed to pass through, and L is the corresponding trapezoidal thread length.

SND-Q and SND-QTJ series outline and connection dimensions



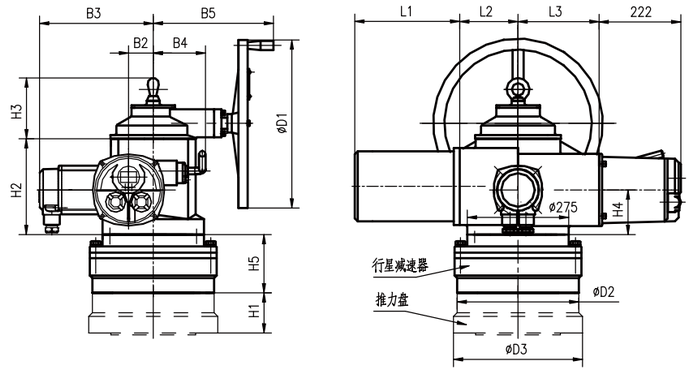
SND-Q and SND-QTJ series outline and connection dimension table

Type	L	H	H1	D	D1	d1 H9	d2 F8	d3	d4	d5	h1	h2	h3	b
SND-Q12.5 SND-QTJ12.5	180	137	0	0	0	22	35	65	M6	50	12	3	62	6
SND-Q25,40 SND-QTJ25	180	122	0	0	0	28	55	90	M8	70	16	3	47	8
SND-Q50 SND-QTJ50	145	104	132	210	155	42	70	125	M10	102	15	3	58	12
SND-Q100 SND-QTJ100	145	104	132	210	155	50	85	150	M12	125	18	3	58	14
SND-Q150,200 SND-QTJ200	145 180	104	143	285	196	60	100	175	M16	140	30	4	72	18
SND-Q300,400 SND-QTJ300	180	104	165	380	246	80	130	210	M20	165	40	5	80	22

Note: SND-Q12.5-40 and SND-QTJ12.5-25 do not require an accelerator or reducer, so H1, D, and D1 in the size table are all 0.

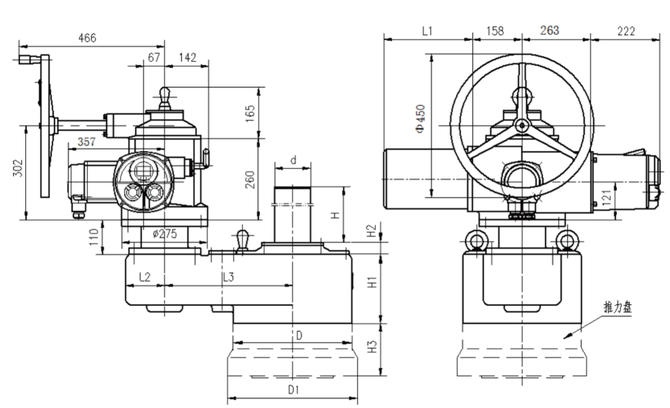


SND series product superposition reducer shape and connection size



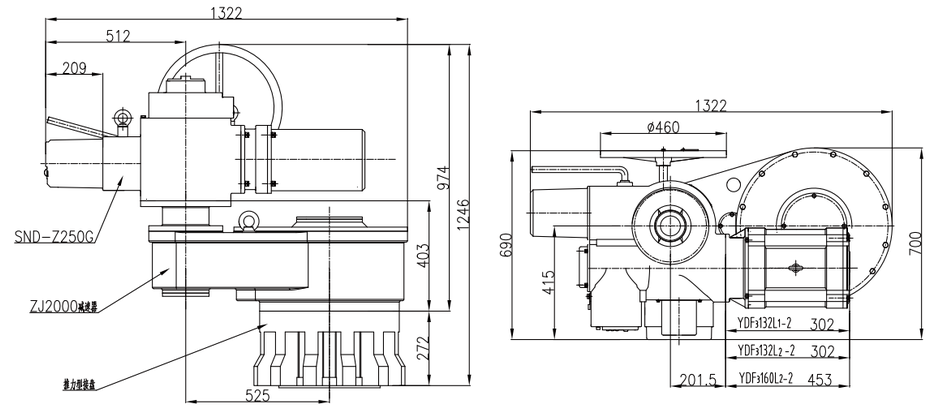
Dimensions of SND series multi-turn products with output torques of 1800N·m and 2500N·m

Type	L1	L2	L3	H1		H2	H3	H4	H5	B2	B3	B4	B5	D1	D2	D3
SND-Z90(/B)D+Z180	255~397	158	263	125 (191)		260	165	121	158	67	357	142	343	450	330	350
SND-Z120(/B)D+Z250																



Dimensions of SND series multi-turn products with output torques of 3500N·m and 10000N·m

Type	L1	L2	L3	H	H1	H2	H3	ϕd	ϕD	ϕD1
SND-Z90(/B)+Z350	255~397	125	410	User custo-mized	222	38	169	115	380	415
SND-Z120(/B)+Z500										
SND-Z100(/B)+Z800	285~397	130	450.5		238	51	195	138	510	510
SND-Z120(/B)+Z1000										

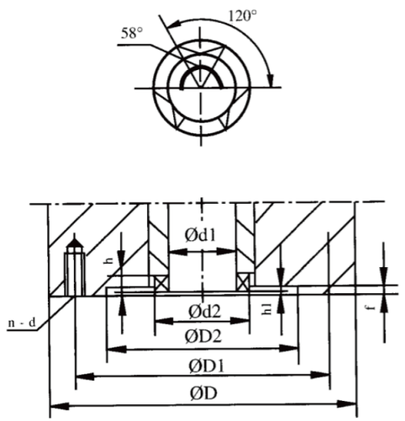


Dimensions of SND series multi-turn products with output torque of 14000N·m ~ 20000N·m

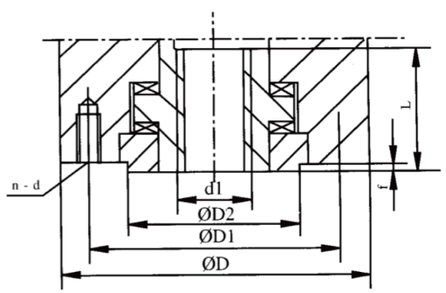
Explanation:

1. The dashed line in the figure shows the thrust plate, which is used for the thrust type electric actuator, and no thrust plate is required for the torque type. The dimensions in H1 brackets in the table are the height dimensions of the medium speed buffer thrust disk and the high speed buffer thrust disk respectively.
2. If a guard is required to protect the valve stem, its length and size are determined by the user.
3. If it is flameproof, add /B to the end of the model, such as SND-Z120/B.
4. High speed electric actuator exists cross-model situation, SND-Z switch type series technical parameter table.

The connection size of SND series multi-rotation products with output torque of 1800N·m ~ 10000N·m



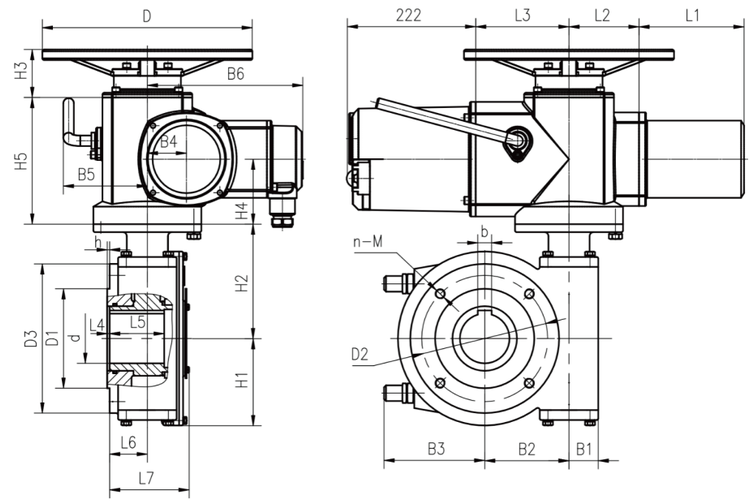
Torque type connection size (JB2920)



Thrust type connection dimensions

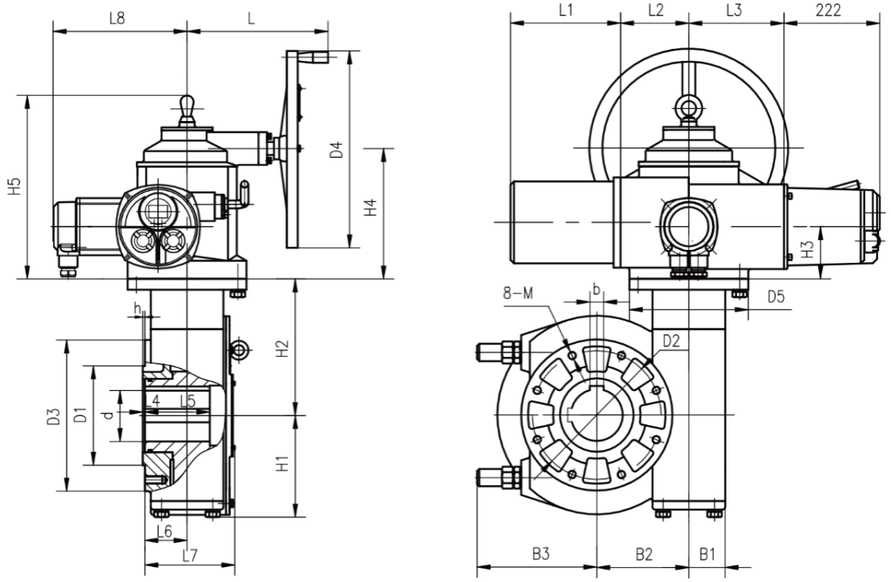
Type	Torque Type (JB2920-81)										Thrust type (ISO5210即GB12222)							
	Frame Type	d1	d2	D2 (H9)	n-d	D1	D	h1	h	f	Flange type	D	D1	D2 (f8)	d1	n-d	L	f
Z180	7	73	98	220	4-M24	285	330	3	16	6	F30	350	298	230	T70	8-M20	130 (179)	5
Z250																		
Z350	8	82	118	280	8-M20	340	380	3	20	6	F35	415	356	260	T100	8-M30	170	5
Z500																		
Z800	9	85	128	300	8-M24	380	510	3	25	8	F40	510	406	300	T120	8-M36	230	8
Z1000	10	105	158	360	8-M30	450	510	3	30	8								

The shape and connection size of SND series partial rotary products with output torque of 2000N·m ~ 400000N·m



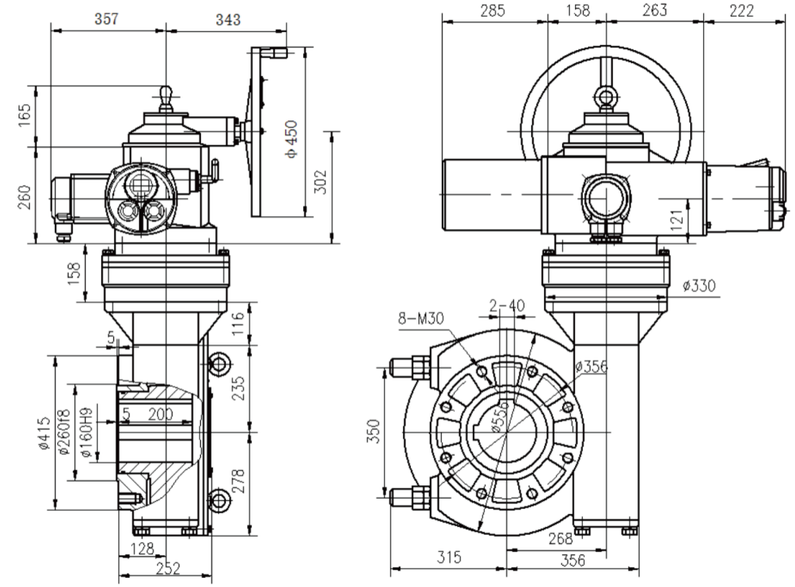
Type	L1	L2	L3	L4	L5	L6	L7	H1	H2	H3	H4	H5	h
SND-Z20-18+DQ200	180	120	160	5	90	88	190	128	162	83	111	217	4
SND-ZTD10-18+DQTJ100	190												
SND-Z30-18+DQ400	180	120	160	5	80	73	146	156	197	83	111	217	5
SND-Z40-18+DQ600													
SND-ZTD20-18+DQTJ200	190												
SND-Z45-18+DQ800	200	148	239	5	110	76	160	175	230	100	118	245	5
SND-Z60-18+DQ1000													
SND-ZTD45-18+DQTJ400													

Type	B1	B2	B3	B4	B5	B6	d (H9)	D	D1 (f8)	D2	D3	n-M	b
SND-Z20-18+DQ200	60	100	162	67	144	313	60	380	100	140	175	4-M16	18
SND-ZTD10-18+DQTJ100													
SND-Z30-18+DQ400	50	140	179	67	144	313	80	380	130	165	210	4-M20	22
SND-Z40-18+DQ600													
SND-ZTD20-18+DQTJ200													
SND-Z45-18+DQ800	59	170	203	89	142	325	100	420	200	254	300	8-M16	28
SND-Z60-18+DQ1000													
SND-ZTD45-18+DQTJ400													

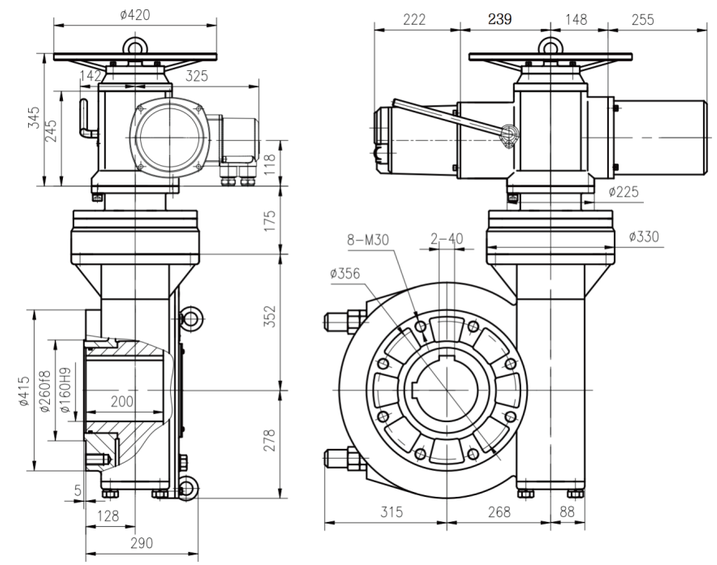


Type	L	L1	L2	L3	L4	L5	L6	L7	L8	H1	H2	H3	H4
SND-ZTD60-18+DQTJ600	343	285	158	263	5	110	76	160	357	175	230	121	302
SND-Z90-18+DQ1600	343	285	158	263	5	150	98	208	357	235	316	121	302
SND-Z120-18+DQ2000													
SND-ZTD90-18+DQTJ800													
SND-ZTD90-18+DQTJ1000													

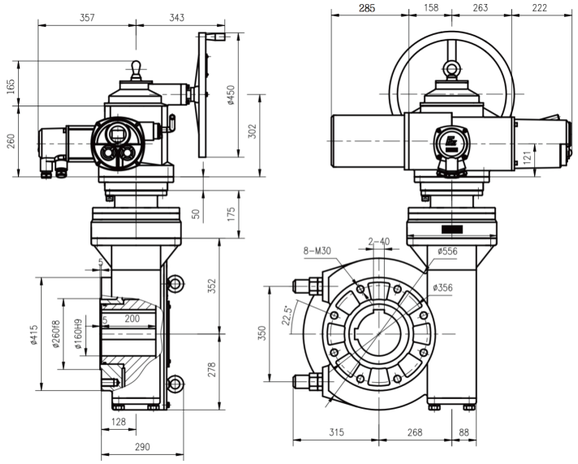
Type	H5	B1	B2	B3	d (H9)	D1 (f8)	D2	D3	D4	D5	h	M	b
SND-ZTD60-18+DQTJ600	425	59	170	203	100	200	254	300	450	275	5	8-M16	28
SND-Z90-18+DQ1600	425	84	213	277	120	230	298	350	450	275	5	8-M20	2-32
SND-Z120-18+DQ2000													
SND-ZTD90-18+DQTJ800													
SND-ZTD90-18+DQTJ1000													



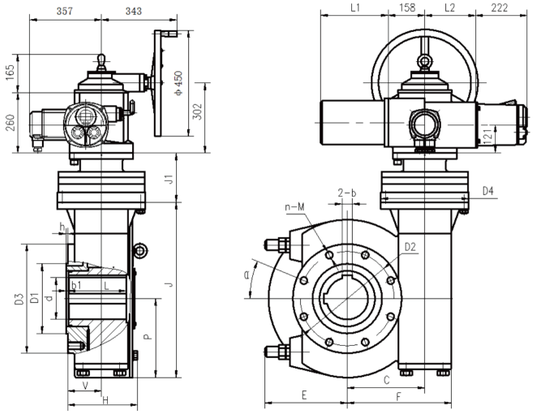
SND-Z120-48D+DQ $\frac{3200}{4000}$ II shape and connection dimensions



SND-ZTD30-18+DQTJ $\frac{1600}{2000}$ II Outline and connection dimensions



SND-ZTD60I-18+DQTJ $\frac{3200}{4000}$ II Form factor and connection size



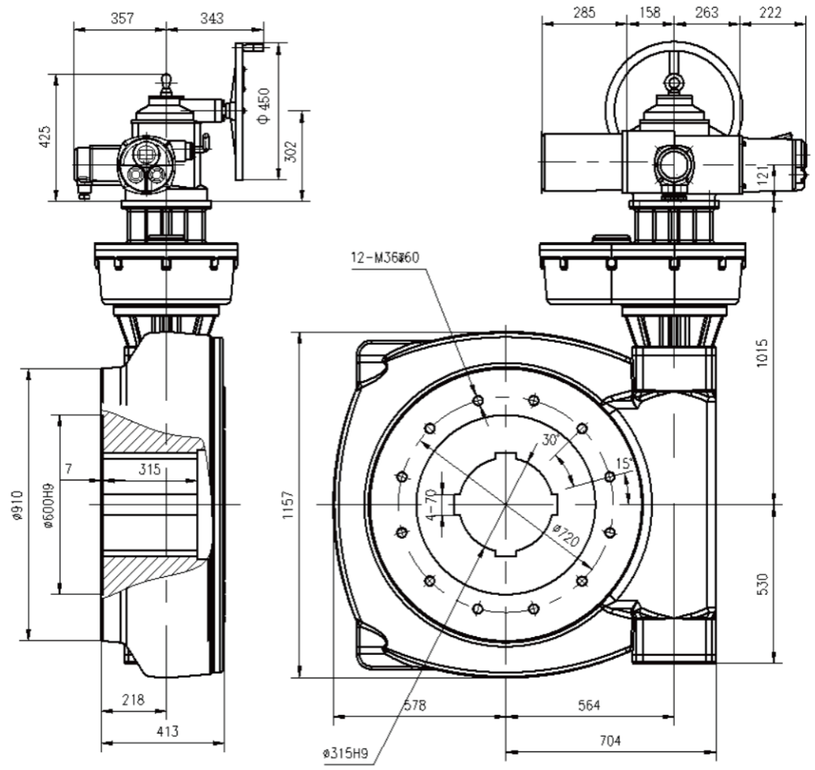
Type	C	D4	E	F	H	J	J1	L1	L2	P	V
SND-Z120-48D+DQ6300 II	335	380	356	450	301	745	158	285	263	340	145
SND-Z90-72+DQ8000 II	335	380	356	450	301	755	212	240	263	340	145
SND-Z90-96D+DQ12500III	465	380	480	605	400	946	404	240	263	426	153
SND-Z120-96D+DQ16500III	465	380	480	605	400	946	404	285	263	426	153
SND-Z120-96D+DQ25000III	582	510	600	772	424	1198	466	285	263	548	190

Type	d (H9)	D1(f8)	D2	D3	h	b1	L	b	n-M	α
SND-Z120-48D+DQ6300 II	180	300	406	470	8	9	250	45	8-M36	22.5°
SND-Z90-72+DQ8000 II	180	300	406	470	8	9	250	45	8-M36	22.5°
SND-Z90-96D+DQ12500III	220	370	483	560	8	8	285	50	12-M36	15°
SND-Z120-96D+DQ16500III	220	370	483	560	8	8	285	50	12-M36	15°
SND-Z120-96D+DQ25000III	280	470	603	686	8	8	310	63	20-M36	9°

Type	C	D4	E	F	H	J	J1	L1	L2	P	V
SND-ZTD90-18+DQTJ6300 II	335	380	356	450	301	755	212	255	263	340	145
SND-ZTD90-18+DQTJ8000 II	335	380	356	450	301	946	212	255	263	426	153

Type	d (H9)	D1(f8)	D2	D3	h	b1	L	b	n-M	α
SND-ZTD90-18+DQTJ6300 II	180	300	406	470	8	9	250	45	8-M36	22.5°
SND-ZTD90-18+DQTJ8000 II	220	370	483	560	8	8	285	50	12-M36	15°

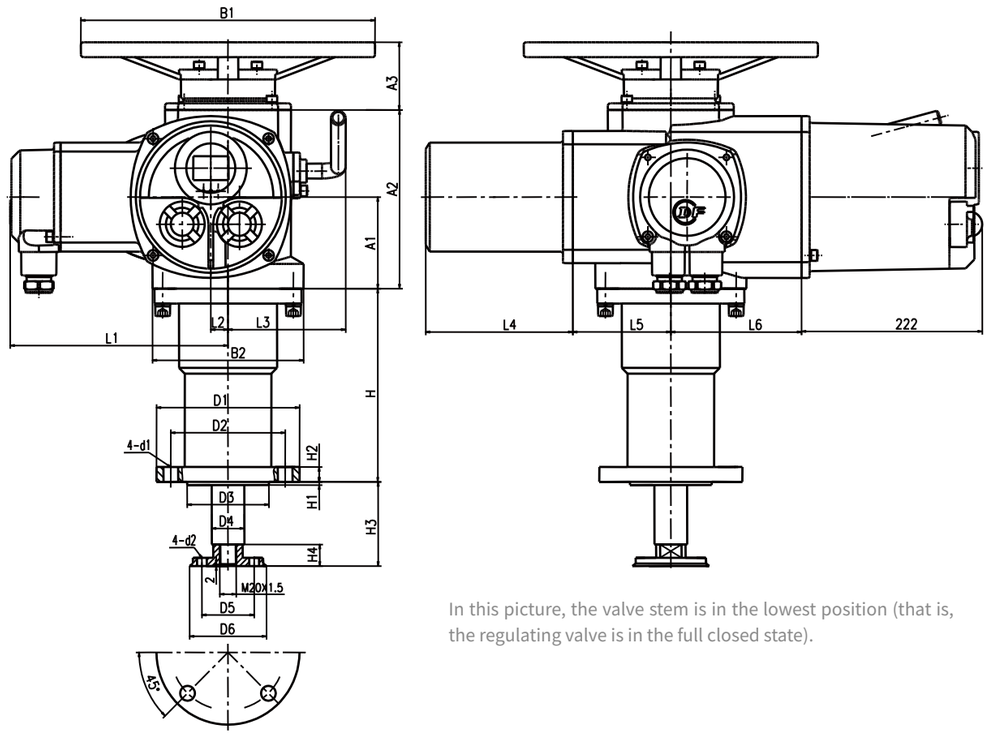
Notes: The position of the keyway in the figure is the position of the valve fully closed.



SND-Z120-72+DQ40000 shape and connection size

SND-ZTZ straight stroke outline and connection dimensions

SND-ZTZ (Without bracket)



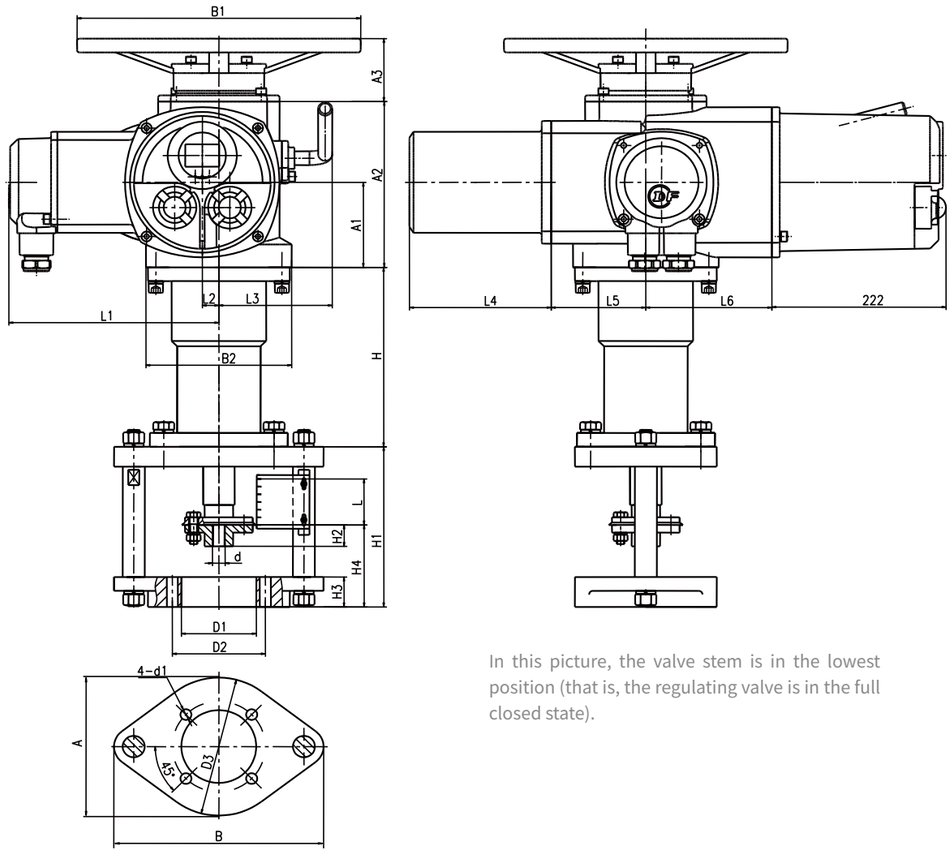
In this picture, the valve stem is in the lowest position (that is, the regulating valve is in the full closed state).

SND-ZTZ Adjustable straight stroke outline and connection dimensions (without support)

SND-ZTZ Adjustable Straight Stroke shape and connection size table (without support)

Type	Output thrust (N)	Stroke (mm)	A1	A2	A3	B1	B2	L1	L2	L3	L4	L5	L6	D1	D2	D3(f8)	D4	D5	D6	D7	d1	d2	H	H1	H2	H3	H4
SND-ZTZ1A	4000 6300 10000 16000	40	108	214	80	Φ280	Φ140	288	21	144	180	110	145	Φ125	Φ102	Φ70	Φ28	Φ52	Φ78	M20X1.5	Φ11	Φ9	192	3	15	79	24
		80																					232			119	
SND-ZTZ2A	25000 40000	60	111	217	83	Φ380	Φ185	313	21	144	190	120	160	Φ175	Φ140	Φ100	Φ40	Φ64	Φ94		Φ18	Φ12	234	4	18	102	26
		120																					294			162	
SND-ZTZ3A	50000 60000	80	118	245	100	Φ420	Φ225	325	55	142	285	148	239	Φ210	Φ165	Φ130	Φ45	Φ78	Φ114	M30X2	Φ22	Φ15.5	265	5	22	137	32
		160																					374			217	
	80000 100000	80																					265			137	
		130																					344			187	
		160																					374			217	

SND-ZTZ (With bracket)



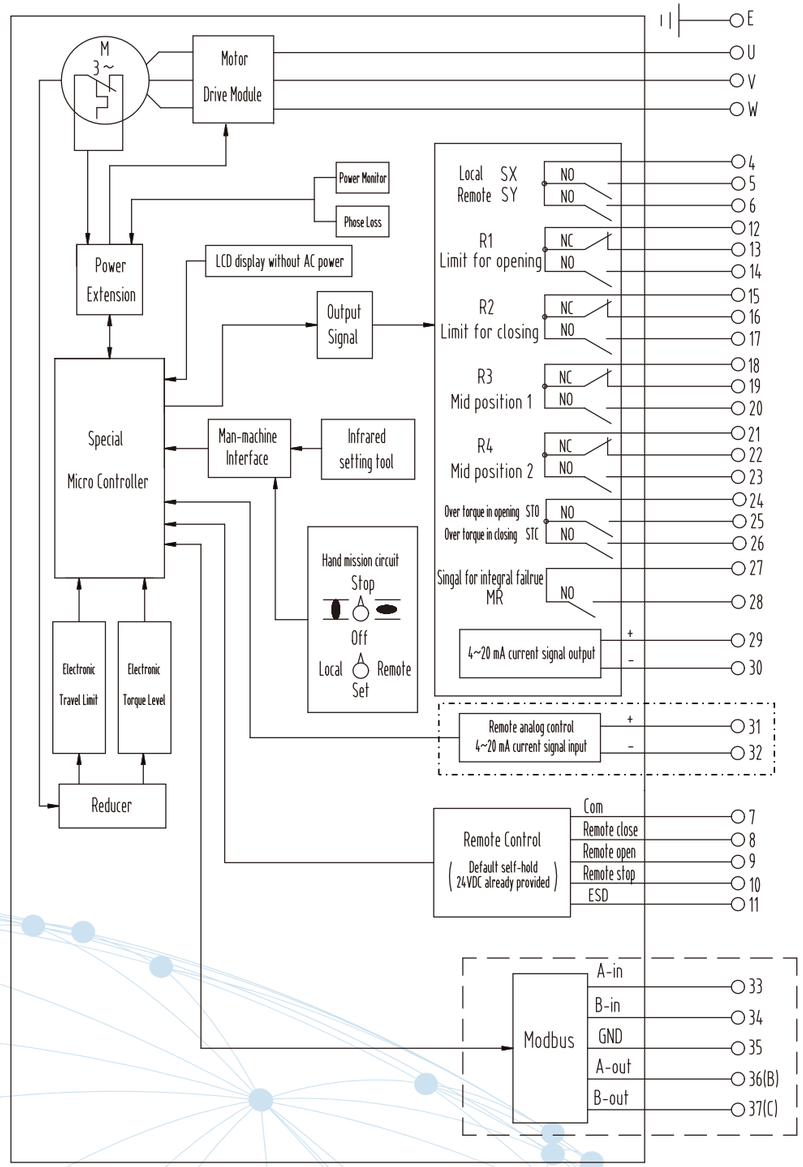
In this picture, the valve stem is in the lowest position (that is, the regulating valve is in the full closed state).

SND-Z Adjustable straight stroke actuator outline and connection dimensions (with bracket)

SND-Z Adjustable straight stroke actuator outline and connection size table (with bracket)

Type	Output thrust (N)	Stroke (mm))	A	A1	A2	A3	B	B1	B2	L1	L2	L3	L4	L5	L6	D1(H9)	D2	d	d1	H	H1	H2	H3	H4
SND-ZTZ1B	4000 6300 10000 16000	40	130	108	214	80	202	Φ280	Φ140	288	21	144	180	110	145	Φ80	Φ105	M12X1.25	Φ12	192	186	25	32	107
		80																		232	226			
SND-ZTZ2B	25000 40000	60	180	111	217	83	266	Φ380	Φ185	313	21	144	190	120	160	Φ95	Φ118	M16X1.5	Φ14	234	209	28	39	107
		120																		294	269			
SND-ZTZ3B	50000 60000	80	240	118	245	100	270	Φ420	Φ225	325	55	142	285	148	239	Φ100	Φ170	M30X2	Φ18	265	287	36	26	150
		160																		374	367			
	80000 100000	80																		265	287			
		130																		344	337			
		160																		374	367			

Electrical principle of SND series electric actuator



Note:
1.the bus control module in the dotted line frame is supplied by special regulations; The function of analog input in the dotted line box is unique to the regulating products, and the switching products do not have this function.
2.Terminals B and C in brackets are explosion-proof terminals.
3.The output contact state in the figure is that the actuator is powered on, works normally, has no fault, and is in the middle position.

Selection table (The data in this table are empirical data under general conditions of use, for reference only)

Gate valve (diameter 25 to 1800mm, pressure 0.1 to 32Mpa, torque unit N.m)

	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400	1600	1800
0.1	25	25	25	25	25	25	50	50	100	100	150	150	200	300	300	450	450	600	600	600	900	1200	1200	1800	1800
0.25	25	25	25	25	25	50	100	100	150	150	200	200	300	300	450	450	600	600	750	900	900	1200	1800	2500	2500
0.6	25	25	25	25	50	100	100	150	150	200	200	300	300	450	450	600	750	900	900	1200	1200	1800	1800	2500	5000
1	25	25	50	100	100	100	150	150	200	200	300	400	450	600	750	900	900	1200	1200	1800	1800	2500	2500	5000	8000
1.6	25	25	50	100	100	150	200	200	300	300	450	500	750	1200	1200	1800	1800	1800	2500	2500	3500	5000	5000	8000	10000
2.5	25	50	50	100	100	150	200	300	300	450	600	750	900	1200	1200	1800	2500	3500	5000	5000	5500	8000	8000	10000	12000
4	25	50	50	100	100	150	200	300	450	500	750	900	1200	1800	1800	2500	3500	5000	6500	8000	8000	12000	12000	16000	20000
6.4	50	50	100	100	100	200	300	450	500	600	900	1200	1800	2500	1800	3500	5000	8000	10000	12000	14000	18000	20000	25000	32000
10.0	50	100	100	150	200	300	450	500	600	900	1200	1800	2500	3500	5000	6000	8000	10000	15000	20000	20000	27000	30000	40000	50000
16	100	150	150	200	300	450	600	750	900	1200	1800	2700	3500	5000	8000	10000	12000	15000	20000	27000	32000	38000	50000	63000	80000
20	100	200	200	200	400	600	900	900	1200	1800	2500	3500	5000	7000	10000	12000	16000	20000	30000	40000	40000	54000	60000	80000	100000
32	200	250	250	300	600	900	1200	1800	1800	2500	3500	5000	7000	10000	15000	20000	24000	30000	40000	54000	64000	76000	100000	130000	160000

Globe valve (diameter 15 to 350mm, pressure 0.6 to 32Mpa, torque unit N.m)

	15	20	25	32	40	50	65	80	100	125	150	200	225	250	300	350
0.6	50	50	50	50	50	50	50	80	100	150	200	300	400	500	600	900
1	50	50	50	50	50	50	80	100	150	200	300	450	500	600	900	1200
1.6	50	50	50	50	80	100	100	200	250	300	350	600	900	1200	1500	1800
2.5	50	50	50	80	100	150	200	250	300	450	500	900	1200	1800	2500	3500
4	50	50	80	100	200	250	300	350	450	600	750	1200	1800	2500	3500	5000
6.4	50	80	100	200	250	300	350	450	600	1000	1200	2000	2500	3500	5000	7000
10	80	100	200	250	300	350	450	600	1000	1200	1800	3500	4000	5500	8000	10000
16	80	100	250	300	350	450	600	1000	1200	1800	3500	5500	6500	8000	12000	16000
32	100	200	300	450	600	750	1000	1800	2500	4000	6000	10000	13000	16000	24000	32000

Ball valve (caliber 50 to 1000mm, pressure 1.6 to 10Mpa, torque unit N.m)

	50	65	80	100	125	150	200	225	250	300	350	400	450	500	600	700	800	900	1000
1.6	50	100	100	150	300	450	600	800	1000	2000	2500	4000	5000	6000	9000	13000	24000	35000	43000
2.5	50	100	150	200	350	600	900	1200	1600	2500	4000	5000	6000	8000	13000	20000	40000	53000	66000
4	100	150	200	350	600	900	1500	1600	2500	4000	5000	6000	8000	10000	20000	30000	60000	80000	100000
6.4	150	200	300	600	1000	1500	2000	3000	4000	6000	8000	10000	13000	16000	32000	48000	88000	130000	160000
10	200	400	600	900	1500	2000	3500	5000	7000	10000	13000	16000	20000	30000	50000	80000	125000	200000	250000

Butterfly valve (diameter 50 to 2000mm, pressure 0.25 to 2.5Mpa, torque unit N.m)

	50	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400	1600	1800	2000
0.25	125	125	125	250	250	250	250	500	700	800	1000	1250	2000	3000	3800	5000	7500	10000	16000	22000	28000	37000
0.6	125	125	125	250	250	500	500	1000	1000	2000	2000	3000	4000	5000	6000	8000	12000	18000	27000	37000	48000	65000
1	125	125	125	250	250	500	500	1000	1500	2000	2000	3000	4500	6400	9000	12000	20000	28000	35000	55000	70000	97000
1.6	125	125	125	250	280	500	800	2000	2000	3000	3000	4000	6000	8500	12000	16000	25000	30000	58000	75000	100000	140000
2.5	125	125	250	250	400	800	1000	2500	3000	4500	5000	6000	8000	12000	18000	23000	30000	45000	70000	95000	130000	160000

Qualification certificate



EAC Certification



CE Certification



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Invention Patent



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Quality Management System Certification

Environmental Management System Certification

OHSMS Certification

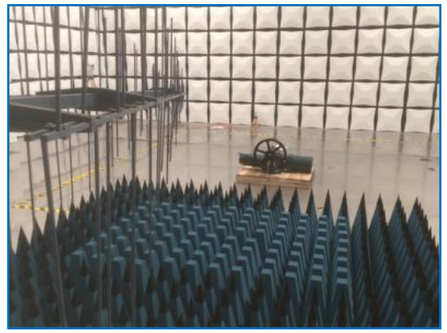
Test



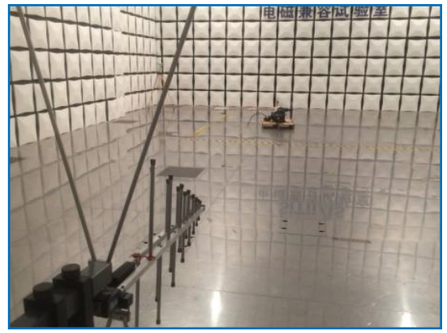
Low temperature test



Vibration test



Radiofrequency electromagnetic field radiation immunity test



Electromagnetic radiation disturbance test



Performance test



Electrostatic discharge immunity test



Life test