



TIANJIN FREYA AUTOMATION TECHNOLOGY CO., LTD.

Tell: 022-27901003

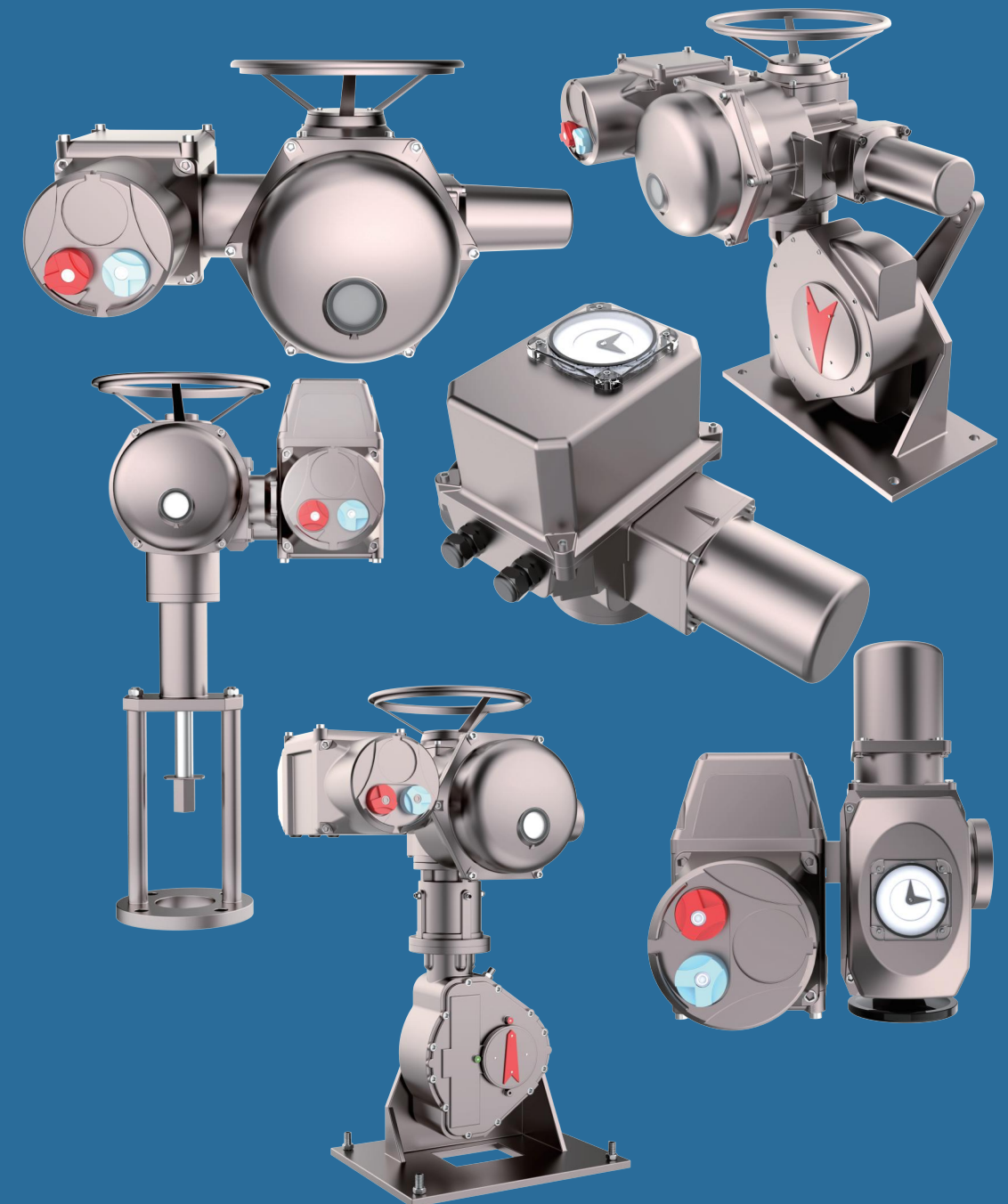
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FREYA ELECTRIC ACTUATOR For Industrial Valve Automation

FRY·弗瑞亚
Electric Actuator



TIANJIN FREYA AUTOMATION TECHNOLOGY CO., LTD.

ST SERIES MULTI-TURN ELECTRIC ACTUATOR

- Torque range from 30 to 700 Nm
- Standard IP67
- Duty & modulating rating:
 - On-off/inching/positioning/modulating
- Control method:
 - Standard electromechanical, on-off type
 - Integrated type
 - Modulating type
- Self-locking at all speed



ASM SERIES MULTI-TURN ELECTRIC ACTUATOR

- Torque range from 30 to 700 Nm
- Standard IP67
- Duty classification:
 - On-off/inching/positioning/modulating
- Control method:
 - Standard electromechanical, on-off type
 - Integrated type
 - Modulating type

ST+VE SERIES LINEAR-TURN ELECTRIC ACTUATOR

- Positioning/modulating type
- Standard IP67
- Max. thrust: 100KN
- Max. stroke: 200mm
- Optional yoke

SQ SERIES QUARTER-TURN ELECTRIC ACTUATOR

Quarter-turn actuators are used to operate ball valves, plug valves, butterfly valves, dampers, louvers or other quarter-turn actuators.

- Torque range from 60 to 2000 Nm
- Standard IP67
- Self-locking at all speed
- Duty classification:
 - On-off/inching/positioning/modulating
- Control method:
 - Standard electromechanical, on-off type
 - Integrated type
 - Modulating type



OA AS BS SERIES QUARTER-TURN ELECTRIC ACTUATOR

Quarter-turn actuators are used to operate ball valves, plug valves, butterfly valves, dampers, louvers or other quarter-turn actuators.

- Torque range from 60 to 2000 Nm
- Standard IP67
- Self-locking at all speed
- Duty classification:
 - On-off/inching/positioning/modulating
- Control method:
 - Standard electromechanical, on-off type
 - Integrated type
 - Modulating type



Customers can decide whether the actuator adopts local control or remote control according to their own system requirements and usage environment.

Our company provides a variety of control modes, and customers can choose the best solution according to their needs.

SWITCH control

The customer provides the control logic to process all the data from the actuator. The reversing starter is located in the user's control cabinet.

Integrated control

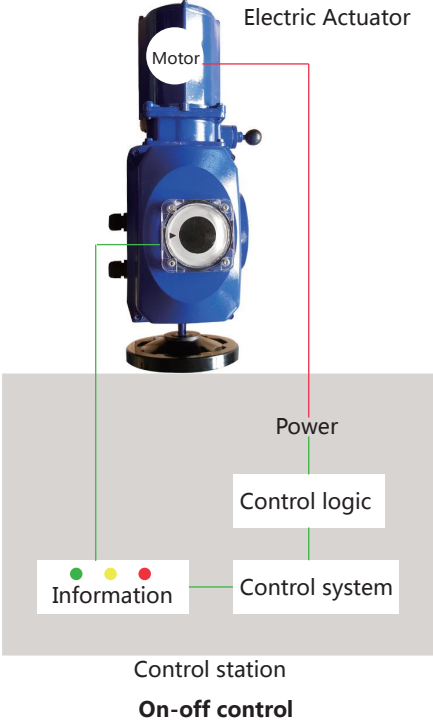
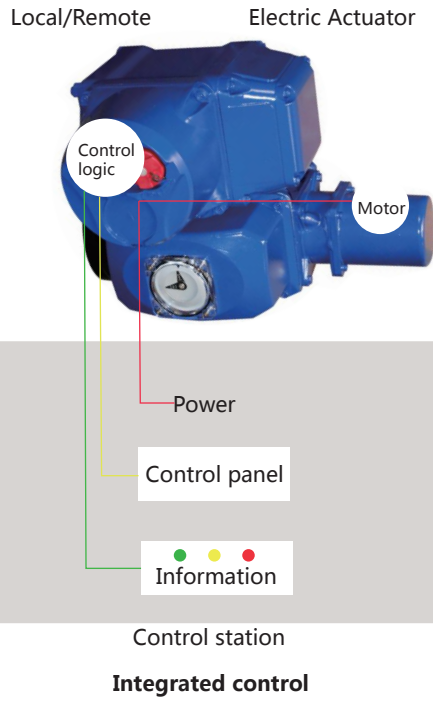
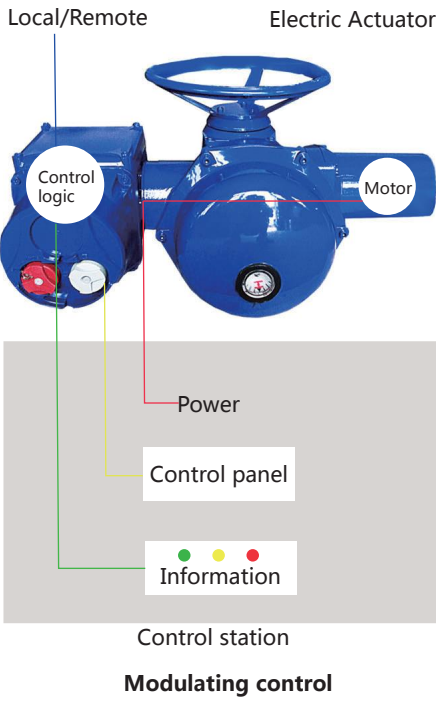
The INTEGRAL+ control system is fully configurable and can implement all actuator control functions, including status reporting, fault handling, system protection and command processing.

POSIGAM+ control is based on the same electronic platform as INTEGRAL+, with positioner functionality added. The linear signal is used to control the actuator (position point) and the actual position of the control valve (feedback).

INTELLI+® control

INTELLI+® can be set up without opening the cover.

INTELLI+® is equipped with an LCD display and related tools for preventive maintenance.



Reliable operation

- Transmission is self-locking at all speeds.
- Continuous gearing driving from motor to valve.
- Main mechanical parts are vibration-resistant.

Motor thermal protection

- Built-in motor thermal protection switch to prevent motor overheating.

Lubrication

- Gear lubrication lasts for life, reducing periodic maintenance requirements.

Powerful motors

- High starting torque asynchronous motor to drive valves
- Good starting torque / rated torque ratio.
- On/Off & fine-tuning/modulating applications: 360 starts per hour at peak operating conditions, S4-30% duty rating.
- Modulating: 1200 starts per hour at peak operating conditions, S4-50% duty rating.
- Sealed ball bearings at both front and rear ends of the motor for easy disassembly.

Position indicator

- The position indicator clearly shows the current valve position. In fact, the indicator is mechanically connected to the valve shaft.

Emergency handwheel

- Non-rotating handwheel

In case of power failure or control system failure, the handwheel ensures that the operator can easily manually drive the valve to any required position. The handwheel does not rotate in all series.

- Automatic clutch handwheel (optional)

The automatic clutch device, using differential gear transmission, does not require the clutch to be operated before operating the hand-wheel. The handwheel can be operated in any situation, even when the valve is blocked by the torque limiter.

Torque sensors

- The output torque for valve operation is measured by the lever deflection of the external crown gear of the planetary gear.

The crown gear is held in position by two calibrated linear springs, which can be independently set at the factory to achieve the required torque.

- Once the torque setting is achieved, the crown lever compresses the spring to a point where a switch is tripped.
- AS this unique system is mechanically frictionless, excellent accuracy and repeatability can be achieved, which is essential when the equipment needs to close on torque.

Travel limit switch

- The cam group system allows quick cam position setting for travel limit setting with just a screwdriver, without the need for special tools.
- Each cam can be set independently.
- Once set, the cam automatically locks in the set position and is not affected by vibration.

Seperated control box

The seperated control box configuration is particularly effective when the actuator needs to be installed in the following locations:

In a difficult access (manholes, high positions, etc.).

Installed on equipment that vibrates violently.

Installed in places with extremely high or low temperatures.

The maximum distance between the control box and the actuator is 50 meters.

Double seal protection

Two sealing rings ensure that moisture does not enter the actuator.

Even if the terminal cover of the connection box is not closed tightly or the cable gland is not tightened, the protection is still effective.

The field control button adopts a reed switch to prevent moisture from entering the actuator.

Measurement principle

- The torque is measured by a dynamically balanced dynamometer (calibrated spring), which has the characteristics of high accuracy, no drift over time and good repeatability. The short response time can detect the valve seat in place early and avoid over-torque operation of the valve.
- The position sensor is mechanically connected to the main gear and transmits a linear signal without losing valve position information.

Accurate valve nformation

- Position and torque are measured as close to the output as possible. The measured data truly reflects the actual torque and position of the valve.
- The position and torque curve of the valve can be directly displayed on the graphical display.

• Absolute sensor

With an absolute sensor, the position and torque information of the valve is not lost even if the power fails. In fact, once the power is restored, the intelligent electronic reads the information from the sensor and transmits it to the control room.

Phase monitoring

Intelligent electronics has an automatic phase correction device. If a 3-phase power supply is used, the actuator can always rotate in the correct direction regardless of the phase sequence of the connected power supply.
If any phase is missing, the actuator will automatically stop and give a fault signal.

Changing in direction protection

The automatic delay function protects the actuator and valve from damage during rapid direction changes by limiting the inertia of mechanical components.

Continuous signal (optional)

The actuator is completely autonomous and does not require batteries for operation. However, a signaling battery board is available as an option to provide some signaling functionality.

The battery ensures that in the event of a power failure:

- Use the intelligent display
- Update remote signal (valve position, alarm, etc.)
- Refresh fieldbus information

If the battery level is low, it can be detected automatically and an alarm message will be sent. However, low battery level will not have any effect on operation.

Fault monitoring relay

A fault relay (SPDT) can be used to indicate if the actuator is in an unavailable state. As standard, this fault monitoring relay can report faults; other types of faults can be easily added by the user. Under normal circumstances, this monitoring relay is always in the energized state and will only change state when a fault occurs.

Emergency shutdown (ESD)

The ESD (Emergency Shutdown) signal is an emergency operation signal that can override all other commands. Depending on the valve operation, ESD can be set to open, close or stop the valve.
To enhance the actuator's ability in extreme situations, the ESD command can be set to overrun torque protection.

SIL Certification

With a professional control board and a built-in self-testing absolute position encoder, the actuator has the following SIL-certified safety integrated functions: Emergency Shutdown - Emergency Open and Emergency Stay. In addition, in an emergency, the accuracy of the signal data is the key to making the right decision and activating the ESD function.
Signal functions provided: Valve Open - Valve Closed - 4 -20mA analog position signal (optional).

Alarms indication

The actuator status can be continuously monitored and various faults or alarms can be reported. An exclamation mark with a triangle frame appears on the on-site display to indicate an alarm.
The actuator can still continue to work when an alarm occurs. The alarm signal will disappear after the fault is eliminated.

Partial stroke test

The partial stroke test function is particularly important for valves that are not often used but are in critical positions. This test function can be used to check the availability of electric valves under normal conditions. The starting position and stroke range of the test can be set.
The test command can be transmitted either via independent wiring or via the fieldbus. If an operating problem is found in the valve during the test, an alarm signal can be generated.

Password protection

A password can be set to protect the actuator parameters from being modified.

Timer

This function can be used to extend the operating time of the actuator, thus avoiding water hammer in the pipeline.

Graphical display

- Simple and clear menu with guided setting, and the menu language can be freely set.
- LCD display can show the clear status of the actuator and control system: real-time position. When the valve is fully closed, it shows "valve closed", when the valve is fully open, it shows "valve open". Real-time torque, expressed as a percentage of the maximum torque of the actuator.
- Alarm/fault flag.

Autonomous work

- The user interface is very intuitive.
- The operation is not battery dependent.
- No special tools are required to enter the menu in any case.

Local signal

- Two LEDs (red/green) indicate the valve position (fully open/fully closed) at the end of the stroke or flash during operation to indicate the direction of movement.
- Red or green LEDs can be freely assigned to open/closed positions.

Local commands

- The red button is used to select remote control, local control and to stop the actuator during operation. It can also be set to disable local operation. This button can also be locked in any position.
- The blue button is used for local operation of the actuator in the open and close direction.
- Local operation can also be set to disable remotely.

User-friendly menu

Language: Select the language for the menus.
Check: Display the parameters and configuration of the actuator (action, alarm, command, torque, position, positioner, signal, fieldbus).
Setup: Set the actuator on the valve (valve closing mode, valve closing direction, position setting).
Modify: Modify the configuration of the actuator (action, command, torque, position, positioner, signal, fieldbus).
Exit setup: to exit the actuator setup.

Manual or automatic setting

After installation on the valve, the user can be guided through the settings:

- Select the closing mode (torque or position)
- Select the closing direction
- Determine the valve open or closed position.

For some valves, automatic settings are possible:
The actuator automatically detects the end position and tests the inertia to optimize the settings.

Infrared communication

It provides the ability for computers to communicate via infrared connections.

- It can greatly simplify the debugging and operation work of field engineers.
- All functions (use, settings/configuration, status, etc.) can be achieved through ordinary computers.

Bluetooth communication (option)

Using Bluetooth technology, computers can communicate wirelessly with actuators

- More convenient communication: With Bluetooth communication, users do not have to face the computer directly to the actuator, and can move the computer at will without affecting the communication effect.
- Easier and safer: Computers using Bluetooth communication can automatically find all actuators within 10 meters. Each actuator has a specific number and can set its own password.

Parameters modification

Operating parameters can be modified via the local control button using the menu on the display.

Wire by wire command

Remote control can be achieved using external voltage or built-in 24VDC in dry contact mode. During operation, the control command can be configured as a pulse command or a self-holding remote control command. The input ports on the control board are isolated by optoelectronic isolators.

Remote indication

Status information is available remotely via relays. No battery backup is required to maintain the position of passive relays. Either normally open or normally closed relays can be selected.

Position and torque transmitter

It can be equipped with an analog position and torque feedback board to provide two feedback signals: position and torque. The module can transmit a 0/4-20 mA signal proportional to the valve opening percentage. A voltage signal can also be obtained by connecting an external resistor. This signal can be electrically isolated from the input signal.

Positioner

A positioner control board can be installed, which allows continuous adjustment of the valve. The positioner module is designed to work with current analog signals (such as 4~20mA) or voltage analog signals (such as 0~10V):

- One input signal: valve position set point
- One output signal: actual valve position feedback

The input signal and output signal are completely independent. The user can also adjust the deadzone.

Fieldbus communication

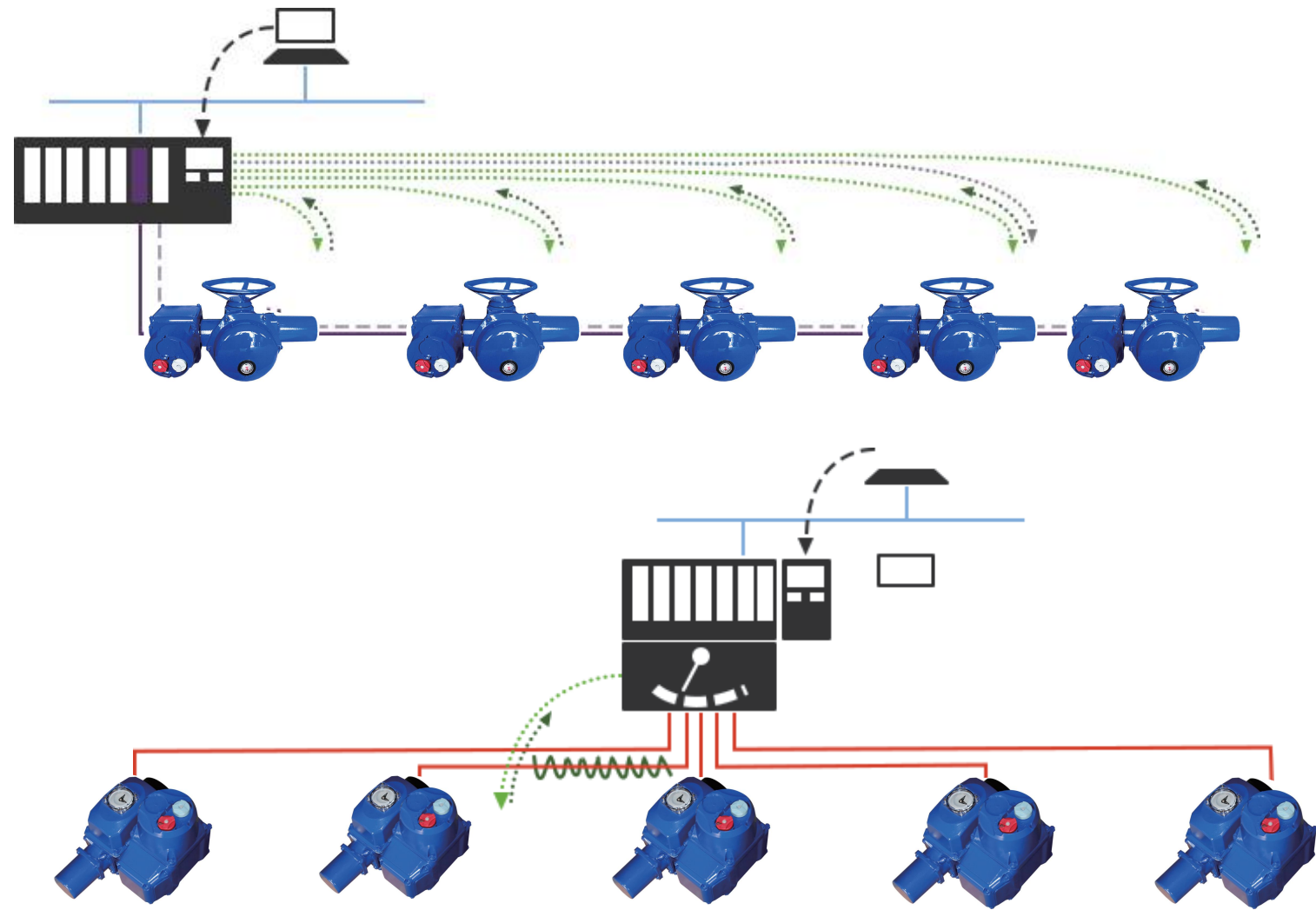
Fieldbus uses only one twisted pair of wires to connect many actuators and communicate information and commands with other devices. The information available for each actuator is doubled, and the cost of field wiring is reduced.

Commonly used standard fieldbus connections:

- PROFIBUS DP
- FOUNDATION FIELDBUS
- MODBUS RTU
- HART
- Other fieldbus on request

Redundant fieldbus can be used to ensure continued operation in the event of a bus interruption. All elements in the bus can be backed up to achieve system redundancy.

- Based on reliable open fieldbus protocol
- Up to 120 actuators, up to 10 km distance
- Fast response time.
- Support one to three lines
- Single or redundant configuration
- Minimize startup time



Profibus		- Fieldbus is the most reliable and commonly used communication protocol for industrial sites that handle discrete data. This product has been certified by Profibus International. - Supports Profibus DP V0, Profibus DP V1 and Profibus REDCOM redundancy
Modbus		- This product faithfully follows the Modbus communication protocol, which is the most common and easiest communication protocol to apply to industrial sites. Compared with other communication protocols, this product can be applied to the site more cheaply and quickly. - Currently, Modbus-RTU products are provided, and customers can choose other options such as Modbus-ASCII and Modbus-TCP.
F/F		- Communication protocol used in process control fields such as oil and gas; this product has been certified by the Fieldbus Foundation.
Hart		- The HART (Highway Address Remote Transducer) communication protocol performs control by adding digital data to the 4-20mA transmission signal. - This product is registered with HCF (HART Communication Foundation)

General specifications	
Torque range	Multi-turn: 30-700Nm/Quarter-turn: 60-3000Nm/Linear-turn: 10-25000N
Shell material	Die-cast aluminum
Control method	On-off type/Positioning type/Modulating type
Shell	
Protection grade	IP67(IP68 optional)
Coating system	Cationic epoxy coating/Optional protection against highly corrosive conditions
	The tightening screws are all stainless steel screws
Ambient temperature	Standard: -20~+70°C/Low:-40~+70°C/High: 0~+90°C
Motor	
Motor data	Squirrel cage motor, insulation class F, built-in thermal protection
Duty rating	S4-30%: On-off type, max number of starts per hour is 360 times
	S4-30%: Positioning type, max number of starts per hour is 360 times
	S4-50%: Modulating type, max number of starts per hour is 1200 times
Mechanical specifications	
Gear design	Self-locking at all speeds
Output flange	Multi-turn: ISO5210 standard/ Quarter-turn: ISO5211 standard
Output shaft	The drive shaft bushing can be removed and processed as needed. It can be installed vertically or horizontally.
Anti-vibration performance	1g 9.8m/s² 10-500Hz
Lubrication	Actuator lubrication for life
Manual operation	Manual and electric operation can be switched freely
Electrical specifications	
Power supply	1Phase, 3Phase, 50/60Hz, up to 480V
Wiring	Internal and external ground terminals
Fuse protection	Main fuses are located on the transformer board. Two automatic fuses for low voltage
Cable entry	NPT 4x3/4", NPT1", NPT 1-1/2" optional

Position and torque sensors	
Stroke limit	• Position: Measuring motion on the output shaft • Position sensor: Absolute sensor
Torque limit	• Torque: Directly measure the transmitted torque • Setting range: 40-100% of the max torque
Controls	
Indication	A dial type LCD provides continuous position indication.
Double sealing protection	The control part of the actuator is completely isolated from the connction box
Power circuit	Motor reversing starters
Signal relay	4 relays: selectable from 23 options
	Contact configuration: Normally open or normally vlosed
	Min current: 10mA at 5V
	Max current: 5A at 250V AC or 5A at 30VDC (inductive load) Optional accessories 3 relays
Fault relay	SPDT monostable relay, in default position when not powered
	Min current: 10mA at 5V
	Max current: 5A at 250V AC or 5A at 30V DC (inductive load)
Analog control	Input (setting) and output (feedback) signals are completely isolated Signal settings: • Input signal: 4-20 mA - Output signal: 4-20mA • Input signal: 0-20 mA - Output signal: 0-20mA • Input signal: 0-10 V - Output signal: 0-20mA (0~10V with external resistor) Analog input: • Current: Impedance 160 Ohms • Voltage: Impedance 11 KOhms Analog output: • Current: Maximum acceptable load is 750 Ohms when powered by 24VDC • Voltage: Minimum acceptable load is 50 KOhms (shunt resistor 500 Ohms)
Travel limit switch	4 SPDT limit switches Switch capacity: Max 250VAC-16A/48VDC-2.5A (resistive load)
Torque limit switch	The torque limit switch is a non-self-holding switch. A pair of SPDT switches is standard. Switching capacity: max 250VAC-16A/48VDC-2.5A (resistive load)
Remote position signal	1000Ω potentiometer, 0.3W, limit moving contact current 1mA Position transmitter: 4-20mA
EC directives	
Conformity with EC directives	The actuator complies with the following requirements: ·2004/108/EC Electromagnetic compatibility ·2006/95/EC Low voltage
	The following harmonized standards: ·General emission standard for industrial environments EN61000-6-4 ·General anti-interference standard for industrial environments EN61000-6-2 ·Rotating motor standard EN 60034-1

PRODUCT SPECIFICATIONS

ST muti-turn electric actuator 3P-380V 50Hz

Max torque Nm	Operating torque Nm	Model	Speed rpm	Time S	Connection flange ISO	S4-50%			
						Power KW	Speed rpm	Rated current A	Starting current A
60	30	ST6	11	5.42	F10	0.10	750	0.80	1.60
			16	3.75		0.10	750	0.80	1.60
			23	2.61		0.37	1500	1.10	5.00
			30	2.00		0.37	1500	1.10	5.00
			46	1.30		0.37	1500	1.10	5.00
140	70	ST14	11	5.42	F10	0.37	1500	1.10	5.00
			16	3.75		0.37	1500	1.10	5.00
			23	2.67		0.50	1500	1.50	5.00
			61	0.98		0.90	1500	2.70	14.0
300	150	ST30	16	3.75	F14	0.90	1500	2.70	21.0
			23	2.67		1.50	1500	3.70	52.0
			61	0.98		2.20	1500	5.10	8.5
700	350	ST70	16	3.75	F16	2.20	1500	5.10	27.0
			23	2.67		3.00	1500	7.20	37.0
			61	0.98		4.00	1500	9.10	52.0

ST muti-turn electric actuator 1P-220V 50Hz

Max torque Nm	Operating torque Nm	Model	Speed rpm	Time S	Connection flange ISO	S4-50%			
						Power KW	Speed rpm	Rated current A	Starting current A
50	40	SRA6	26	2.31	F10	0.20	1500	2.50	3.50
60	40		17	3.53		0.20	1500	2.50	3.50
60	40		10	6.00		0.20	1500	1.20	1.70
130	80	SRC	9	6.67	F14	0.20	1500	2.50	3.50
60	30	ST6	11	5.42	F10	0.10	750	2.50	3.00
50	30		16	3.75		0.10	750	2.50	3.00
60	30		23	2.61		0.40	1500	4.00	6.30
55	30		30	2.00		0.40	1500	4.00	6.30
40	30		46	1.30		0.40	1500	4.00	6.30
140	70	ST14	11	5.42	F10	0.30	1500	3.50	15.0
140	70		16	3.75		0.30	1500	3.50	15.0
110	70		23	2.67		0.30	1500	3.50	15.0
60	60		61	0.98		0.30	1500	3.50	15.0

PRODUCT SPECIFICATIONS

OA AS quarter-turn electric actuator 3P-380V 50Hz

Max torque Nm	Operating torque Nm	Model	Time S	Connection flange ISO	S4-50%			
					Power KW	Speed rpm	Rated current A	Starting current A
60	60	OA6	6	F05/F07	0.03	1500	0.3	1.60
60	60		3	F05/F07	0.04	3000	0.3	1.60
100	60	OA8	6	F05/F07	0.10	1500	0.6	5.00
80	60		3	F05/F07	0.14	3000	0.7	5.00
80	60	OAP	30/60	F05/F07	0.03	1500	0.3	5.00
150	80	OA15	25	F07	0.03	1500	0.3	5.00
250	140	ASP	30/60	F07/F10	0.03	1500	0.3	5.00
500	250	AS50	30	F10/F07	0.06	1500	0.3	5.00
500	250		60	F10/F07	0.06	750	0.6	14.0
1000	500	AS100	30/45	F12/F14	0.10	1500	0.6	21.0
1000	500		80	F12/F14	0.03	1500	0.3	52.0
1000	600	BS100	30	F12/F14	0.10	1500	0.6	8.5
1000	600		60	F12/F14	0.06	1500	0.3	27.0
2500	1250	AS200	70	F16/F14	0.10	1500	0.6	37.0
4000	2000	AS400	125	F16	0.10	1500	0.6	52.0

OA AS quarter-turn electric actuator 1P-220V 50Hz

Max torque Nm	Operating torque Nm	Model	Time S	Connection flange ISO	S4-50%			
					Power KW	Speed rpm	Rated current A	Starting current A
60	60	OA6	6	F05/F07	0.03	1500	0.6	0.9
100	60	OA8	6	F05/F07	0.06	1500	1.2	1.7
80	60	OAP	30/60	F05/F07	0.03	1500	0.6	0.9
150	80	OA15	25	F07	0.03	3000	0.6	0.9
250	140	ASP	30/60	F07/F10	0.03	1500	0.6	0.9
500	250	AS50	30	F07/F10	0.06	1500	1.2	1.7
500	250		60	F07/F10	0.08	750	1.5	2.4
1000	500	AS100	45	F12/F14	0.15	1500	2.0	3.0
1000	500		80	F12/F14	0.06	1500	1.2	1.7
1000	600	BS100	30	F12/F14	0.15	1500	2.0	3.0
1000	600		60	F12/F14	0.06	1500	1.2	1.7
2000	1200	AS200	70	F16/F14	0.15	1500	2.0	3.0
3000	2000	AS400	125	F16	0.15	1500	2.0	3.0

PRODUCT SPECIFICATIONS

ST+RS quarter-turn electric actuator 3P-380V 50Hz

Max torque Nm	Operating torque Nm	Model	Time S	ST speed rpm	Connection flange ISO	S4-50%			
						Power KW	Speed rpm	Rated current A	Starting current A
500	500	ST6+RS50	56	11	F10	0.10	750	0.80	1.60
			38	16		0.10	750	0.80	1.50
			27	23		0.37	1500	1.10	5.00
1000	1000	ST6+RS102	68	11	F12	0.10	750	0.80	1.60
			47	16		0.10	750	0.80	1.50
			33	23		0.37	1500	1.10	5.00
			25	30		0.37	1500	1.10	5.00
2500	2500	ST6+RS252	164	11	F16	0.10	1500	0.80	1.60
			113	16		0.10	750	1.10	1.50
			78	23		0.37	750	1.10	5.00
			60	30		0.37	1500	1.10	5.00
			39	46		0.37	1500	1.10	5.00
3600	2280	ST6+RS600	218	11	F16	0.10	1500	0.80	1.60
			105	16		0.10	750	0.80	1.50
			104	23		0.37	750	1.10	5.00
			80	30		0.37	1500	1.10	5.00
			52	46		0.37	1500	1.10	5.00
3500	3500	ST14+RS432	98	11	F16	0.37	1500	1.10	5.00
			68	16		0.37	1500	1.10	5.00
			47	23		0.37	1500	1.10	5.00
6000	3800	ST14+RS600	218	11	F16	0.37	1500	1.10	5.00
			150	16		0.37	1500	1.10	5.00
			104	23		0.50	1500	1.50	5.00
			49	61		0.90	1500	2.70	14.00
16800	11200	ST14+RS1825G	113	61	F25	0.90	1500	2.70	14.00
10780	7140	ST14+RS3030	199	16	F25	0.37	1500	1.10	5.00
			138	23		0.50	1500	1.50	5.00
			52	61		0.90	1500	2.70	14.00
28000	18480	ST14+RS3030G	156	61	F25	0.90	1500	2.70	14.00
14100	9300	ST30+RS1825	143	16	F25	0.90	1500	2.70	14.00
			100	23		1.10	1500	3.70	21.00
			38	61		2.20	1500	5.10	27.00
18000	12000	ST30+RS1825G	113	61	F25	2.20	1500	5.10	27.00

PRODUCT SPECIFICATIONS

ST+RS quarter-turn electric actuator 3P-380V 50Hz

Max torque Nm	Operating torque Nm	Model	Time S	ST speed rpm	Connection flange ISO	S4-50%			
						Power KW	Speed rpm	Rated current A	Starting current A
23100	15300	ST30+RS3030	199	16	F25	0.90	1500	2.70	14.00
			138	23		1.50	1500	3.70	27.00
			53	61		2.20	1500	5.10	27.00
30000	19800	ST30+RS3030G	156	61	F25	2.20	1500	5.10	27.00
34200	21900	ST30+RS5035	209	23	F25	1.50	1500	3.70	21.00
			79	61		2.20	1500	5.10	27.00
50000	32000	ST30+RS5035G	236	61	F35	2.20	1500	5.10	27.00
42900	40000	ST30+RS6340	98	61	F40	2.20	1500	5.10	27.00
18000	12000	ST70+RS1825G	113	61	F25	4.00	1500	9.10	52.00
30000	19800	ST70+RS3030	199	11	F25	2.20	1500	5.10	27.00
			138	23		3.00	1500	7.20	37.00
			52	61		4.00	1500	9.10	52.00
30000	19800	ST70+RS3030G	156	61	F25	4.00	1500	9.10	52.00
50000	32000	ST70+RS5035	209	23	F25	3.00	1500	7.20	37.00
			79	61		4.00	1500	9.10	52.00
50000	32000	ST70+RS5035G	236	61	F35	4.00	1500	9.10	52.00
63000	40000	ST70+RS6340	98	61	F40	4.00	1500	9.10	52.00

PRODUCT SPECIFICATIONS

ST+RS quarter-turn electric actuator 1P-220V 50Hz

Max torque Nm	Operating torque Nm	Model	Time S	ST speed rpm	Connection flange ISO	S4-50%			
						Power KW	Speed rpm	Rated current A	Starting current A
500	500	ST6+RS50	56	11	F10	0.10	750	2.50	3.00
			38	16		0.10	750	2.50	3.00
			27	23		0.40	1500	4.00	6.30
1000	1000	ST6+RS102	68	11	F12	0.10	750	2.50	3.00
850	850		47	16		0.10	750	2.50	3.00
1000	1000		33	23		0.40	1500	4.00	6.30
935	935		25	30		0.40	1500	4.00	6.30
2500	2500	ST6+RS252	164	11	F16	0.10	750	2.50	3.00
2100	2100		113	16		0.10	750	2.50	3.00
2500	2500		78	23		0.40	1500	4.00	6.30
2310	2310		60	30		0.40	1500	4.00	6.30
1680	1680		39	46		0.40	1500	4.00	6.30
3600	2280	ST6+RS600	218	11	F16	0.10	750	2.50	3.00
3000	1900		105	16		0.10	750	2.50	3.00
3600	2280		104	23		0.40	750	4.00	6.30
3300	2190		80	30		0.40	1500	4.00	6.30
2400	1520		52	46		0.40	1500	4.00	6.30
6600	4400	ST6+RS1825G	230	30	F25	0.40	1500	4.00	6.30
4800	3200		150	46		6.30	1500	4.00	6.30
3500	3500	ST14+RS432	98	11	F16	0.30	1500	3.50	15.00
3500	3500		68	16		0.30	1500	3.50	15.00
2750	2750		74	23		0.30	1500	3.50	15.00
6000	3800	ST14+RS600	218	11	F16	0.30	1500	3.50	15.00
6000	3800		150	16		0.30	1500	3.50	15.00
6000	3800		104	23		0.30	1500	3.50	15.00
3600	2280		49	61		0.30	1500	3.50	15.00
7200	4800	ST14+RS1825G	113	61	F25	0.30	1500	3.50	15.00
10780	7140	ST14+RS3030	199	11	F25	0.30	1500	3.50	15.00
8470	5610		138	16		0.30	1500	3.50	15.00
4620	3060		52	23		0.30	1500	3.50	15.00
12000	7920	ST14+RS3030G	156	61	F25	0.30	1500	3.50	15.00
16680	10680	ST14+RS5035G	236	61	F35	0.30	1500	3.50	15.00

PRODUCT SPECIFICATIONS

ST+VE linear-turn electric actuator 3P-380V 50Hz

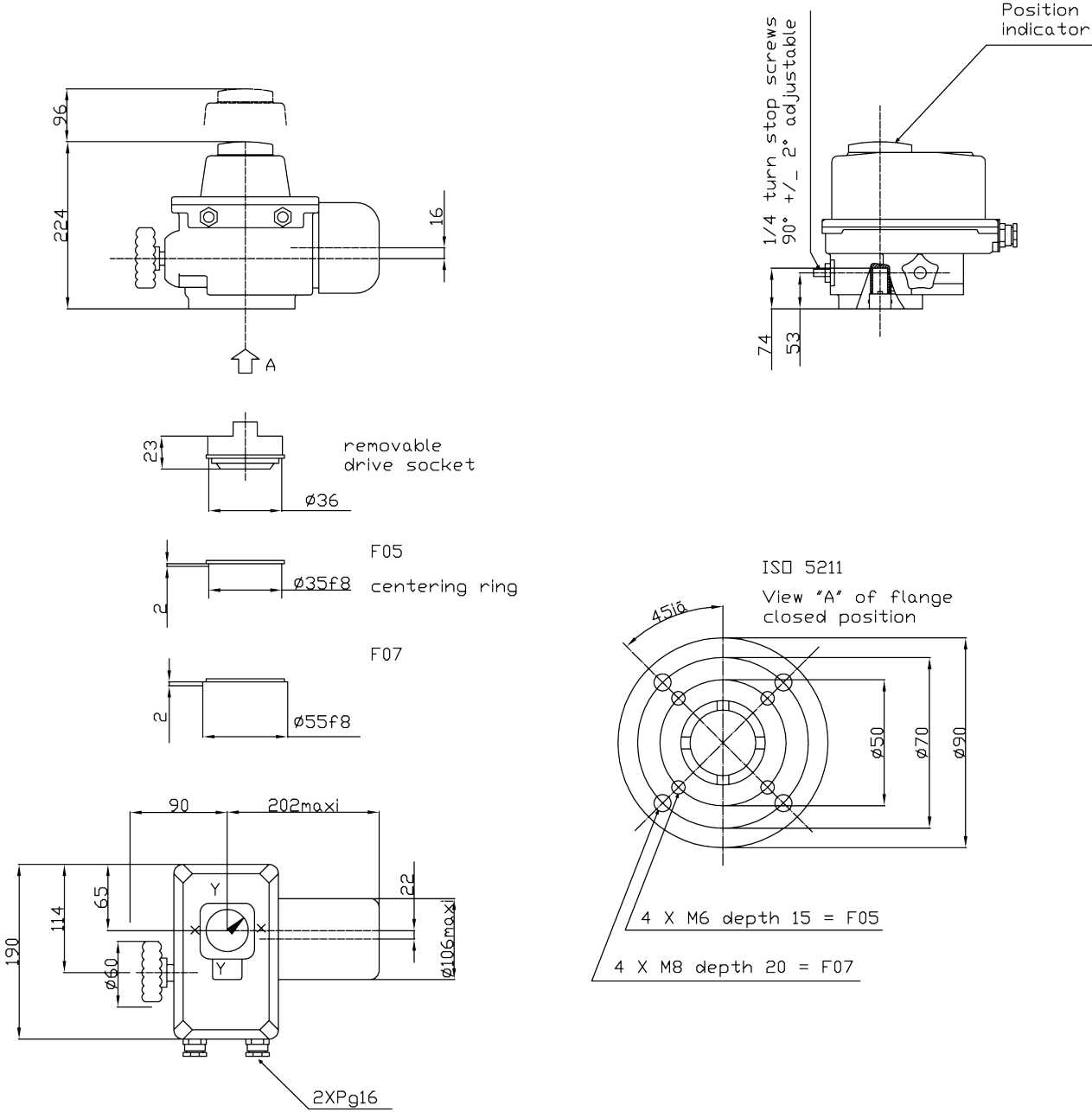
Stroke range mm	Max. thrust KN	Operating thrust KN	Model	Speed rpm	S4-50%			
					Power KW	Speed rpm	Rated current A	Starting current A
10-20	40	20	SRA6/17+VE50S/2	1.76	0.10	1500	0.60	1.10
	40	20	SRA6/10+VE50S/2	3.00	0.10	1500	0.60	1.10
	100	50	ST14/16+VE50R/2	1.87	0.37	1500	1.10	5.00
	100	50	ST14/11+VE50R/2	2.27	0.37	1500	1.10	5.00
20-40	40	20	SRA6/26+VE50S/2	1.15	0.10	1500	0.60	1.10
	100	50	ST14/23+VE50R/2	1.30	0.50	1500	1.50	5.00
30-50	100	50	ST14/60+VE50R/2	2.00	0.90	1500	2.70	14.00
42900	27	18	SRA6/17+VE100S/4	0.88	0.10	1500	0.60	1.10
50-100	27	18	SRA6/26+VE100S/4	0.57	0.10	1500	0.60	1.10
	40	20	ST6/46+VE100S/2	0.65	0.37	1500	1.10	5.00
	40	30	ST14/16+VE100S/4	0.94	0.37	1500	1.10	5.00
	40	30	ST14/23+VE100S/4	0.65	0.50	1500	1.50	5.00
	90	45	ST30/16+VE100R/6	0.60	0.50	1500	1.50	5.00
100-200	40	20	ST6/46+VE200S/2	0.65	0.37	1500	1.10	5.00
	40	30	ST14/60+VE200S/4	2.50	0.90	1500	2.70	14.00
	90	45	ST30/23+VE200R/6	0.41	1.50	1500	3.70	21.00
	90	45	ST30/6+VE200R/6	0.60	0.90	1500	2.70	14.00

ST+VE linear-turn electric actuator 1P-220V 50Hz

Stroke range mm	Max. thrust KN	Operating thrust KN	Model	Speed rpm	S4-50%			
					Power KW	Speed rpm	Rated current A	Starting current A
10-20	40	20	SRA6/17+VE50S/2	1.76	0.15	1500	2.00	3.00
	40	20	SRA6/10+VE50S/2	3.00	0.06	1500	1.20	1.70
	100	50	ST14/16+VE50R/2	1.87	0.30	1500	3.50	15.00
	100	50	ST14/11+VE50R/2	2.27	0.30	1500	3.50	15.00
20-40	40	20	SRA6/26+VE50S/2	1.15	0.15	1500	2.00	3.00
	100	50	ST14/23+VE50R/2	1.30	0.30	1500	3.50	15.00
30-50	70	50	ST14/60+VE50R/2	2.00	0.30	1500	3.50	15.00
50-100	27	18	SRA6/17+VE100S/4	0.88	0.15	1500	2.00	3.00
	22	18	SRA6/26+VE100S/4	0.57	0.15	1500	2.00	3.00
	40	20	ST14/16+VE100S/4	0.94	0.30	1500	3.50	15.00
	40	20	ST14/23+VE100S/4	0.65	0.30	1500	3.50	15.00
100-200	28	20	ST6/46+VE200S/2	0.65	0.40	1500	4.00	6.30
	40	30	ST14/60+VE200S/4	2.50	0.30	1500	3.50	15.00

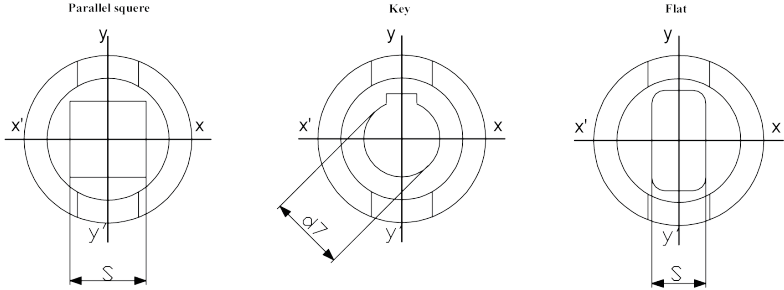
QUARTER-TURN DIRECT MOUNTED ELECTRIC ACTUATOR

OAP OA6 OA8 on-off type direct mounted



SOCKET MACHINING

Socket with 2 positions



Standard dimensions

S
9/11/14/16/17/19

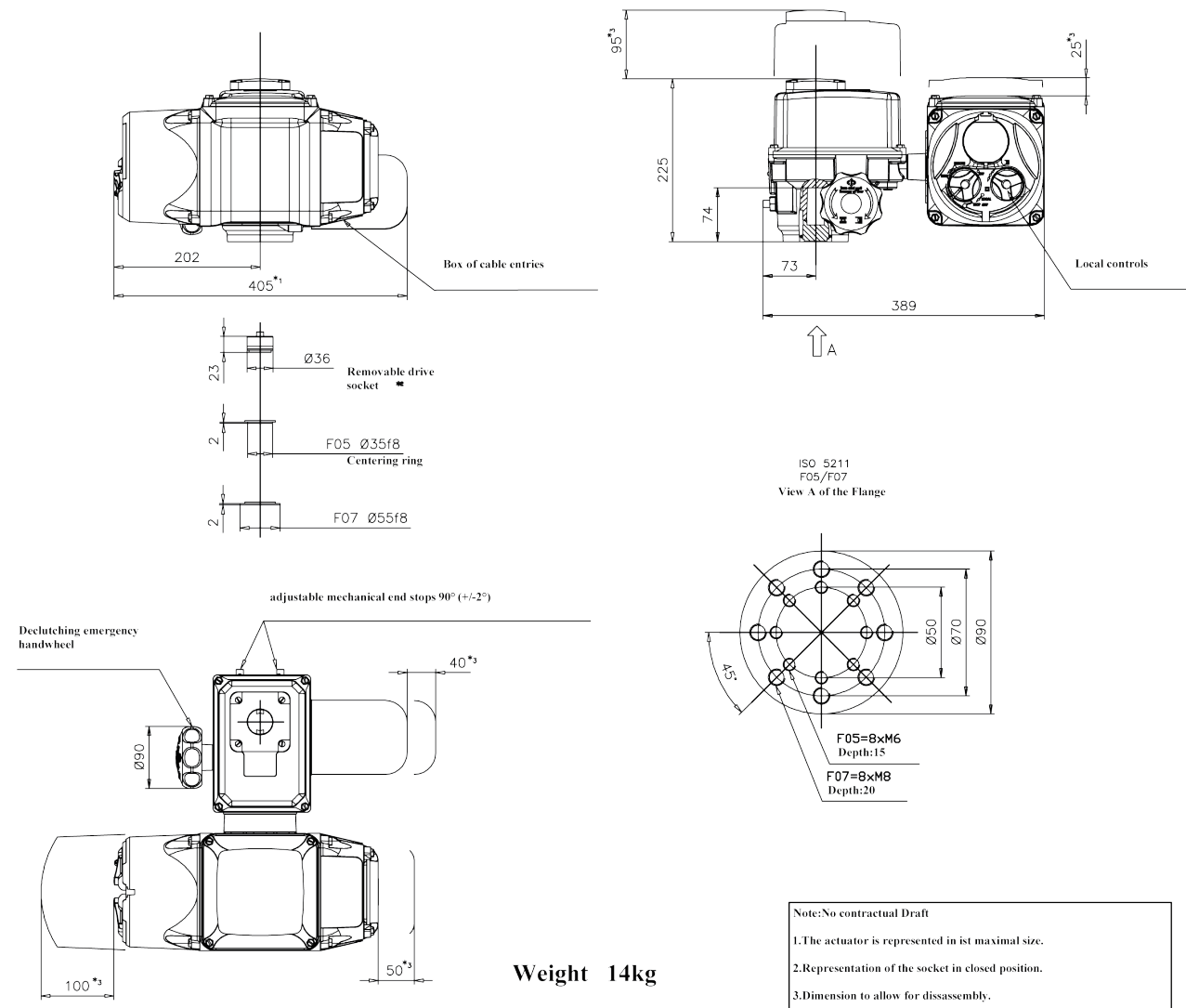
Ød7
14/18/20/22

S
14

45° machining on request

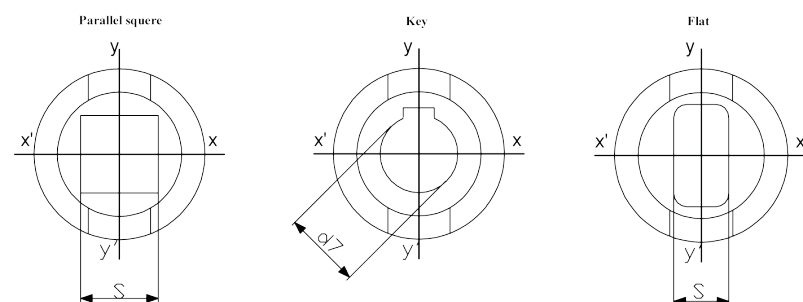
INSTALLATION DIMENSIONS

OAP OA6 OA8 modulating type direct mounted



SOCKET MACHINING

Socket with 2 positions



Standard dimensions

S
9/11/14/16/17/19

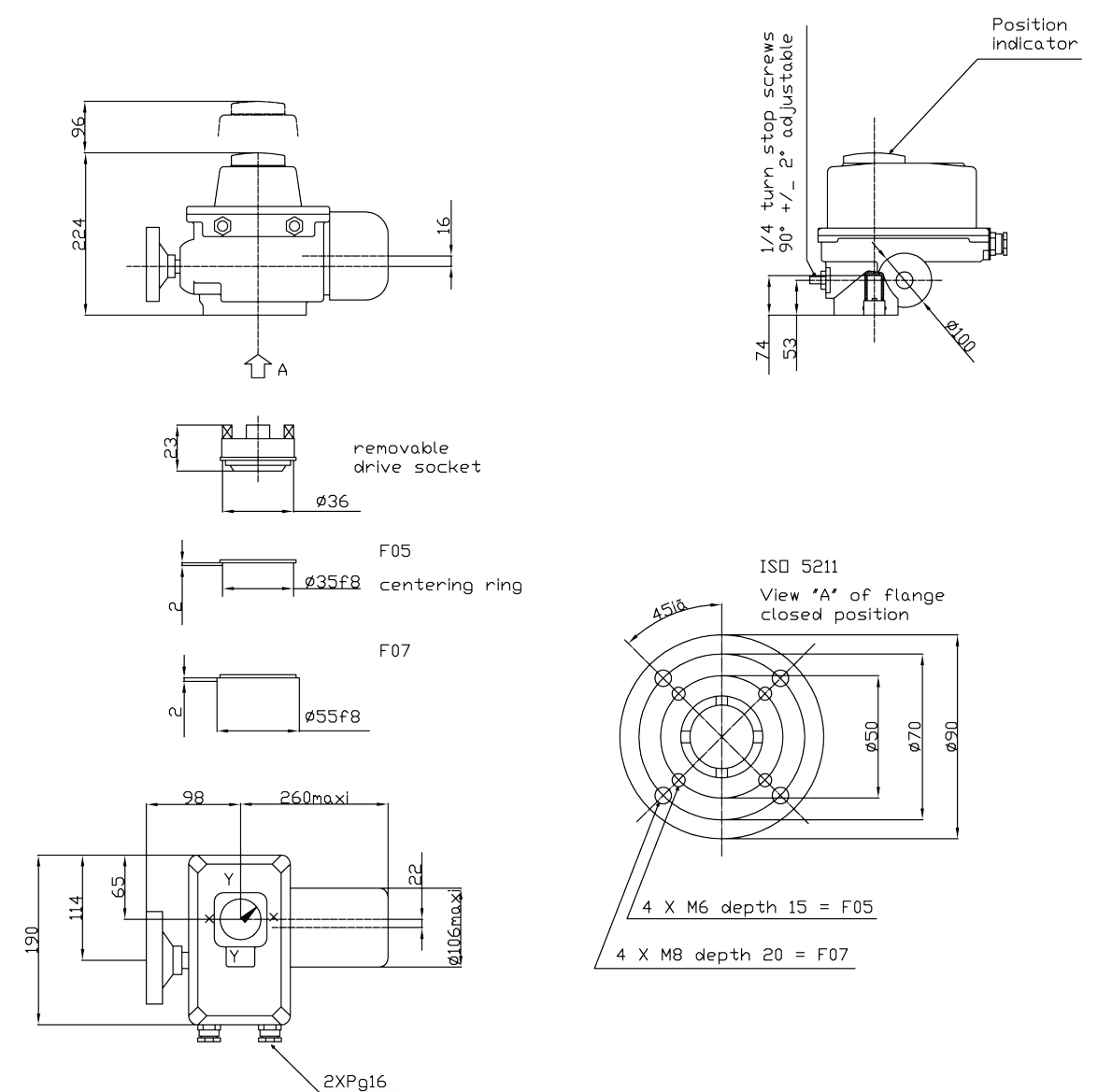
Ød7
14/18/20/22

S
14

45° machining on request

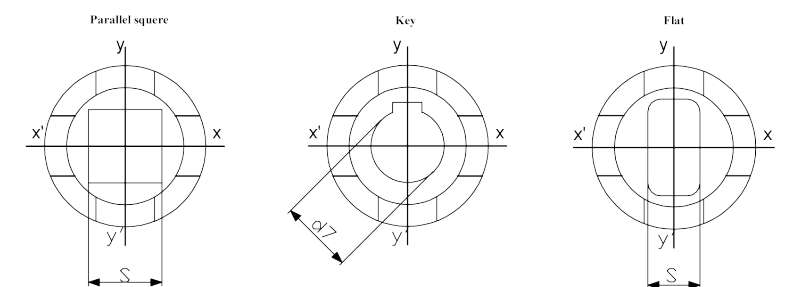
INSTALLATION DIMENSIONS

OA15 on-off type direct mounted



SOCKET MACHINING

Socket with 4 positions



Standard dimensions

S
9/11/14/16/17/19

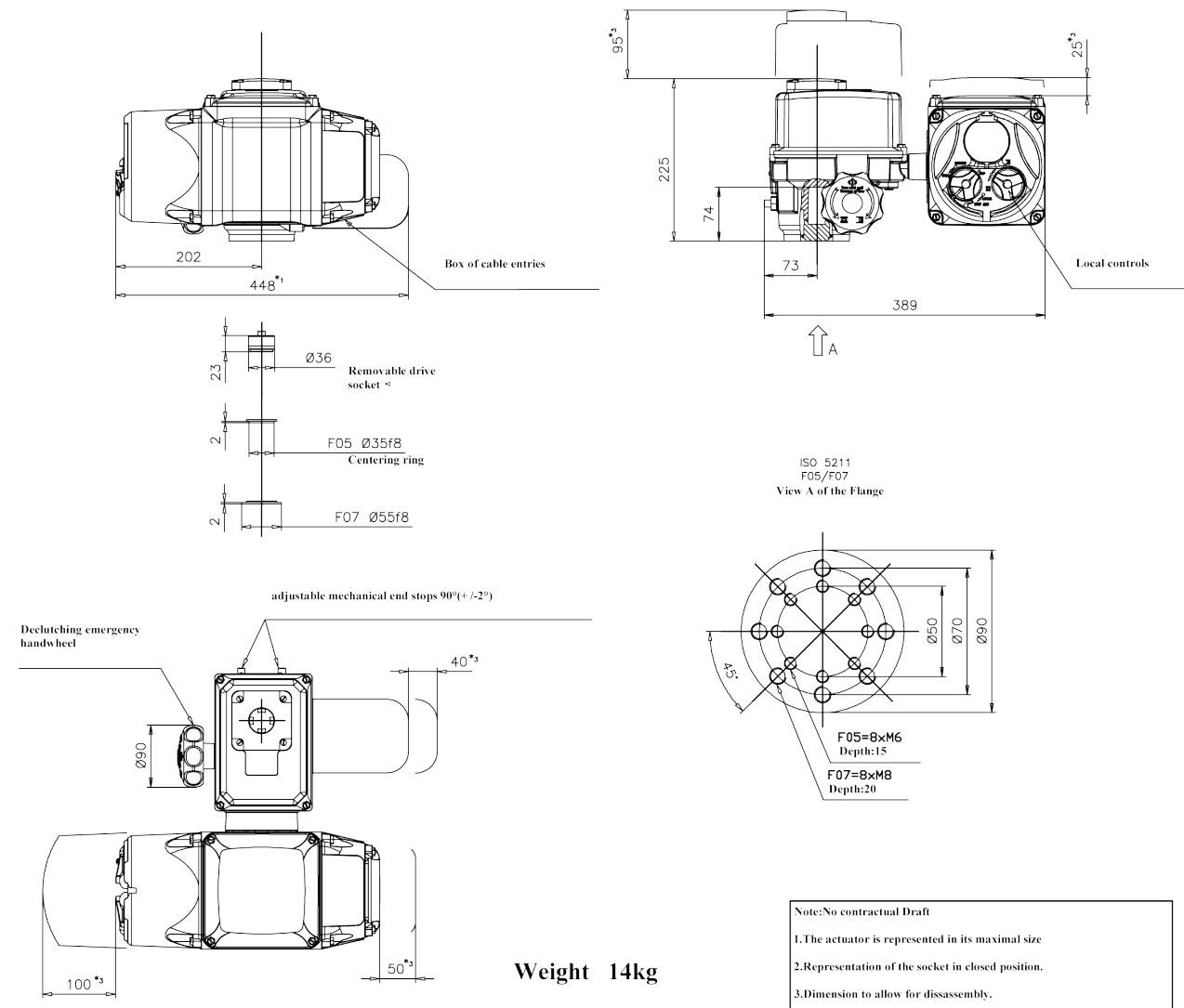
Ød7
14/18/20/22

S
14/19

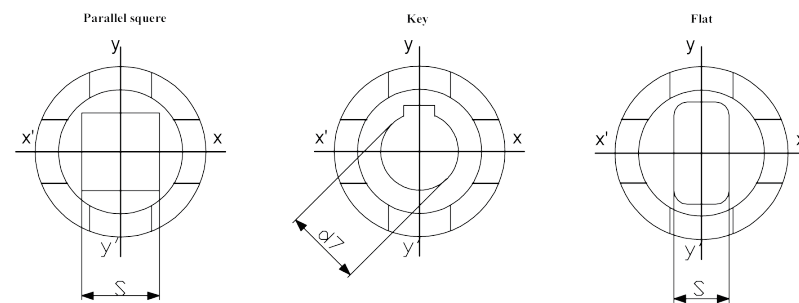
45° machining on request

INSTALLATION DIMENSIONS

OA15 modulating type direct mounted



SOCKET MACHINING



Socket with 4 positions

Standard dimensions

S
9/11/14/16/17/19

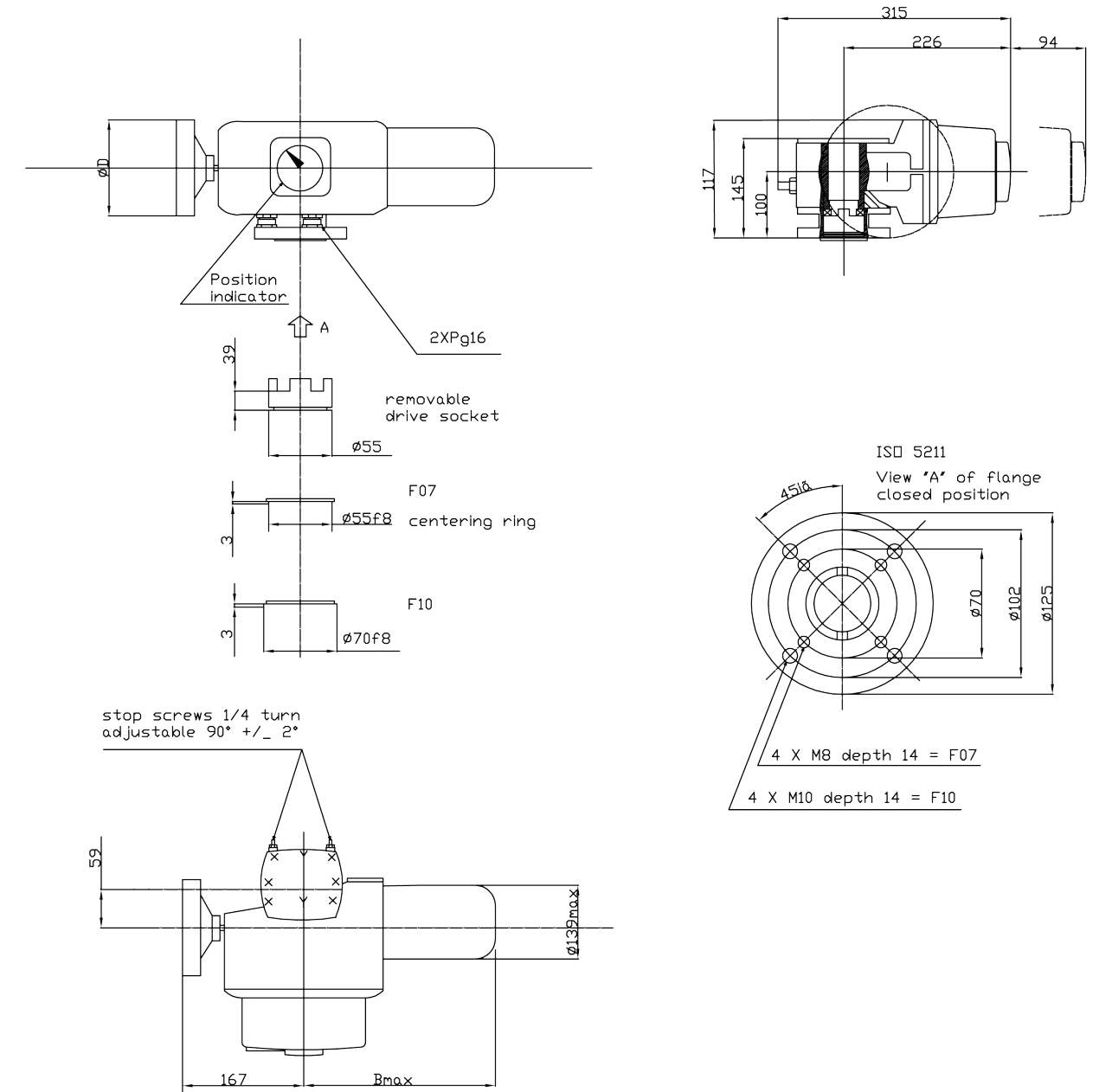
Ød7
14/18/20/22

S
14/19

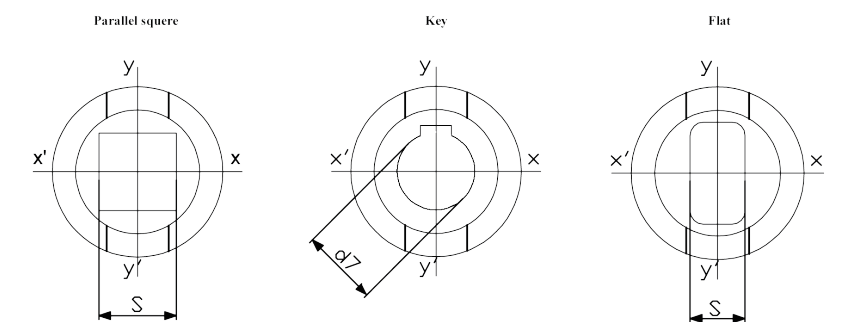
45° machining on request

INSTALLATION DIMENSIONS

AS18 AS25 ASP on-off type direct mounted



SOCKET MACHINING



Socket with 2 positions

Standard dimensions

S
14/17/19/22

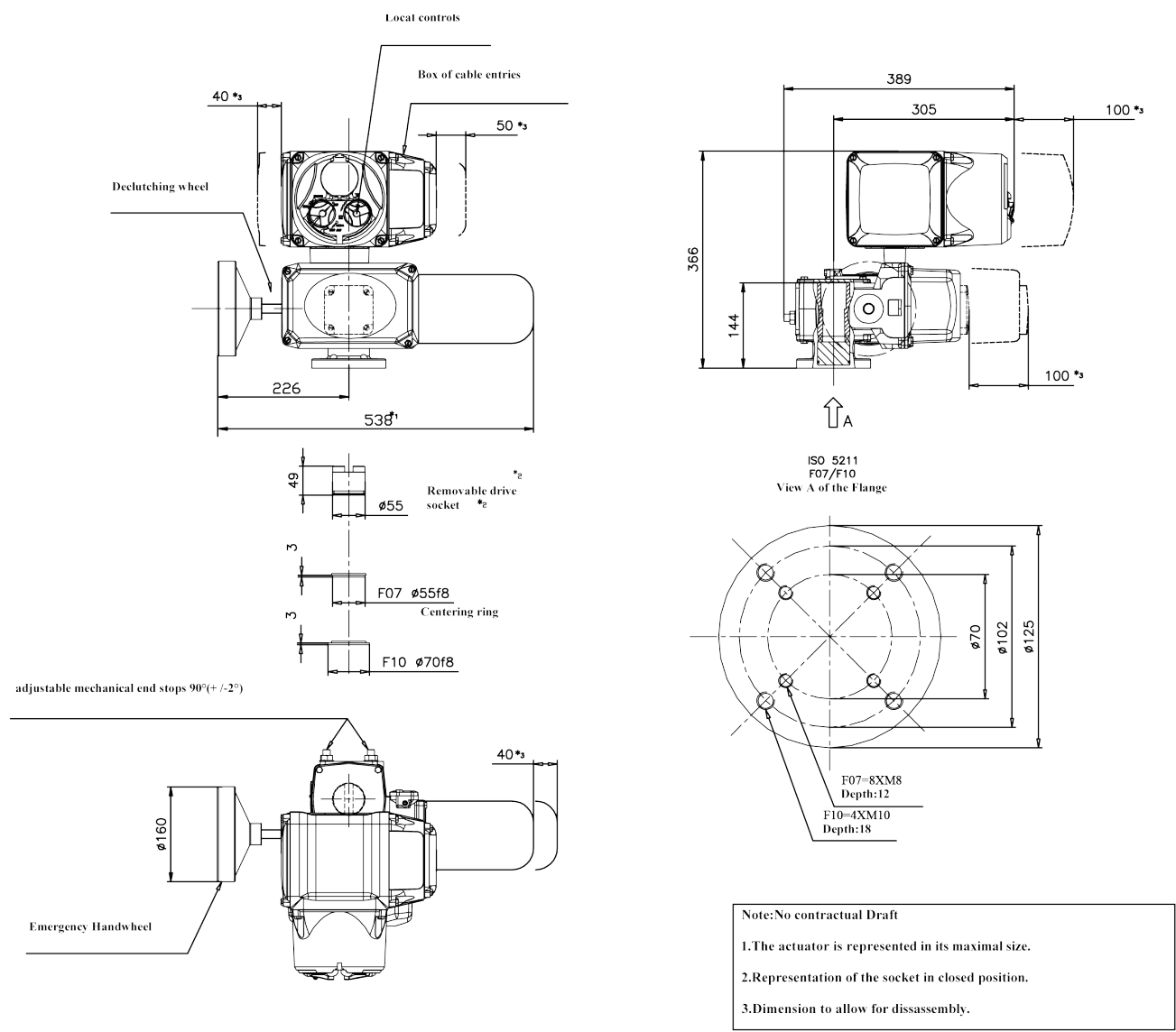
Ød7
22/28/30

S
14/17/19/22

45° machining on request

INSTALLATION DIMENSIONS

AS18 AS25 ASP modulating type direct mounted

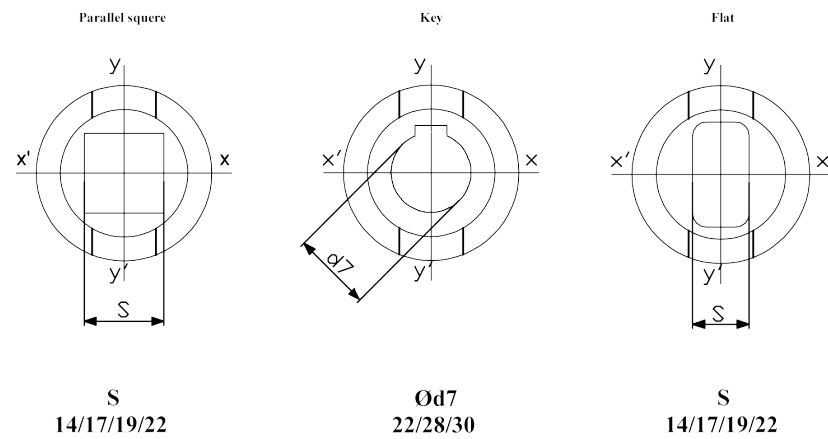


Weight 25kg

SOCKET MACHINING

Socket with 2 positions

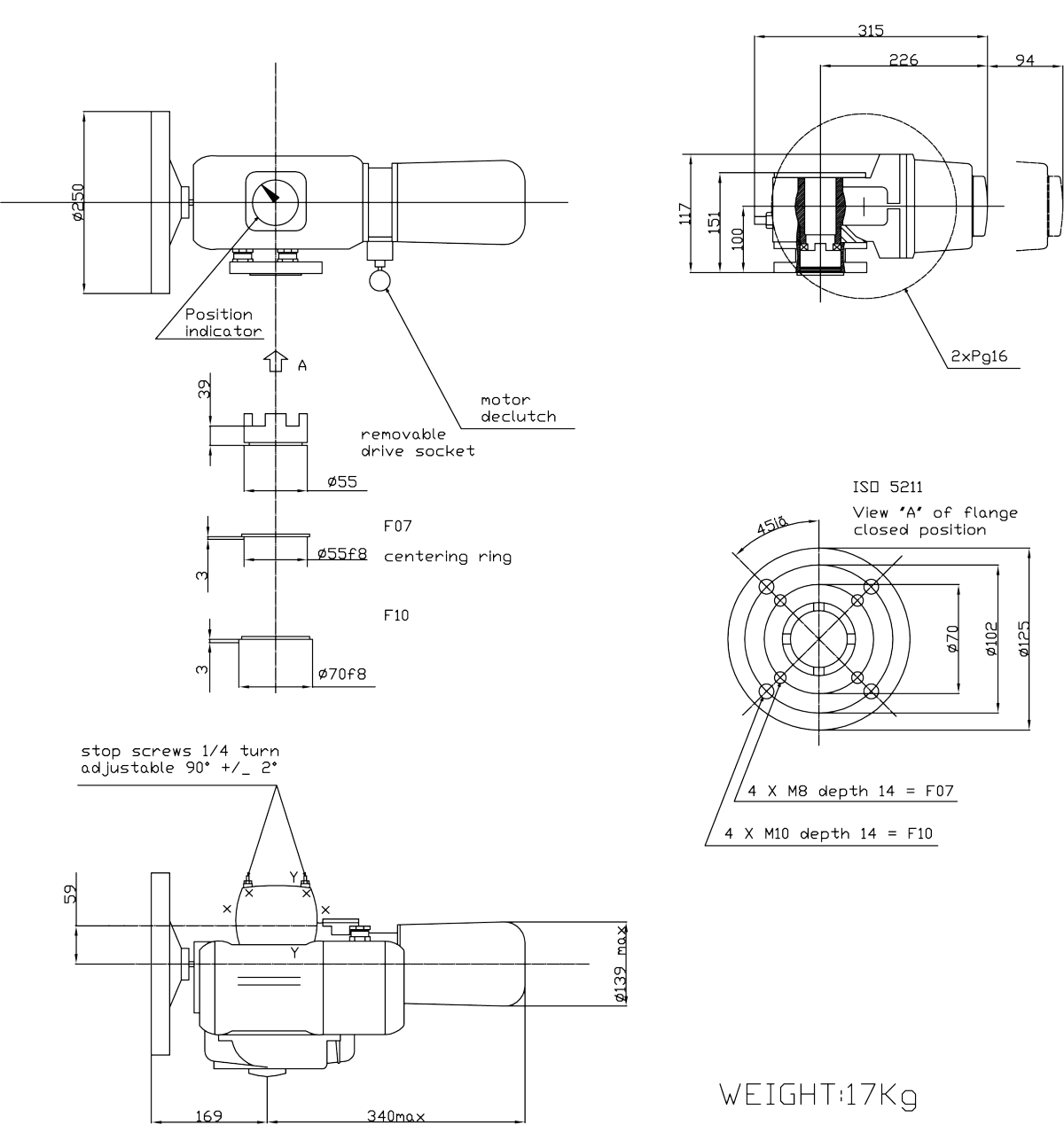
Standard dimensions



45° machining on request

INSTALLATION DIMENSIONS

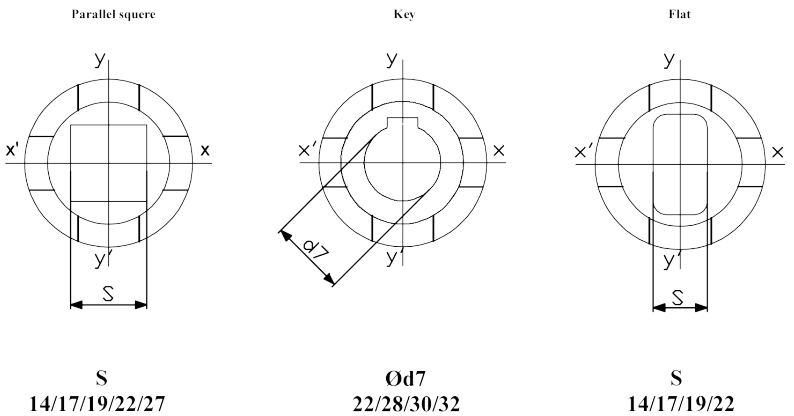
AS50 on-off type direct mounted



SOCKET MACHINING

Socket with 4 positions

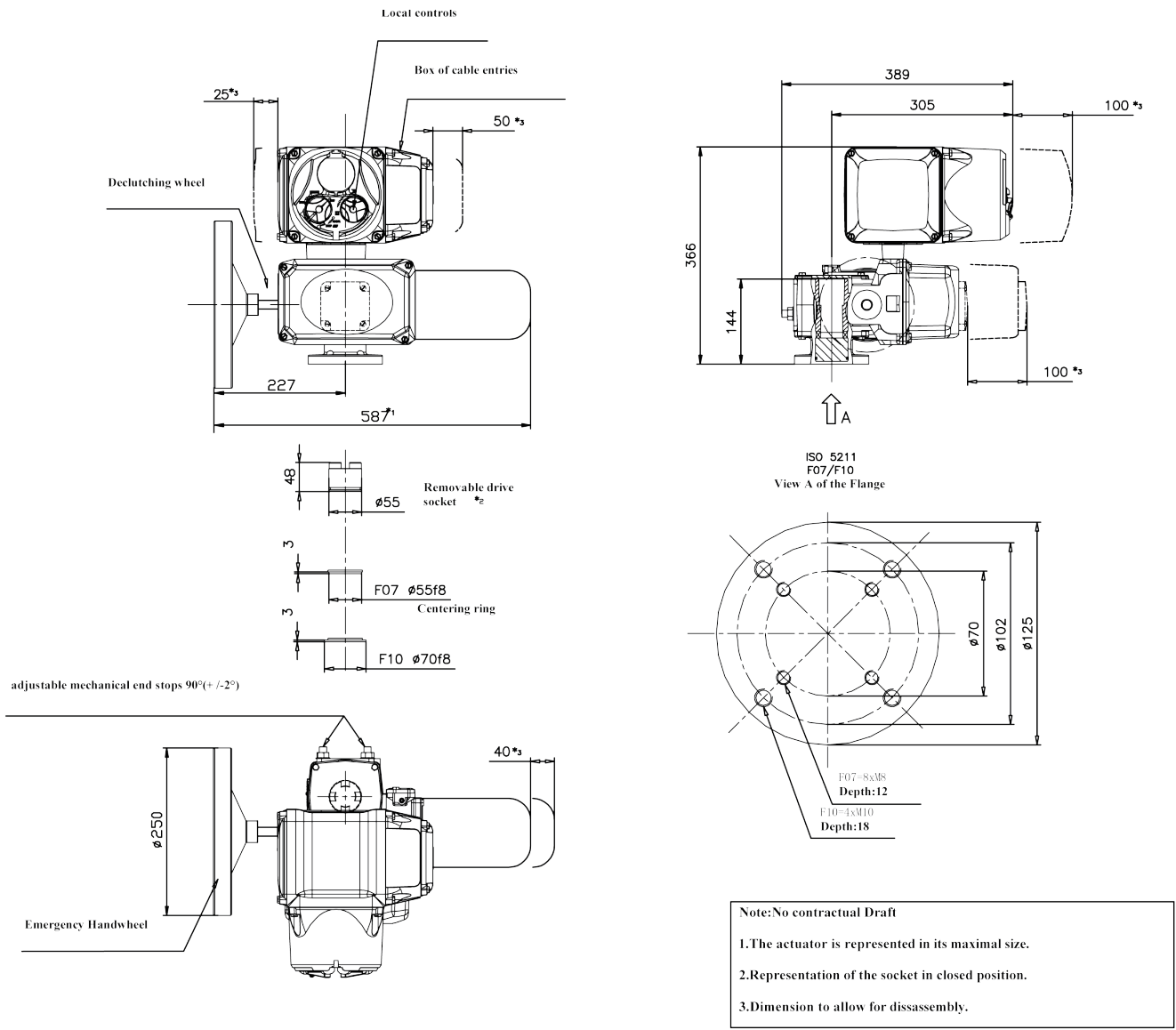
Standard dimensions



45° machining on request

INSTALLATION DIMENSIONS

AS50 modulating type direct mounted

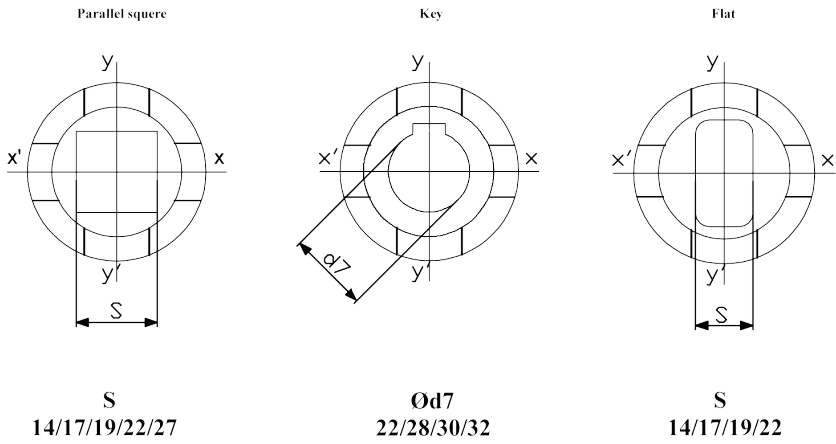


Weight 27kg

SOCKET MACHINING

Socket with 4 positions

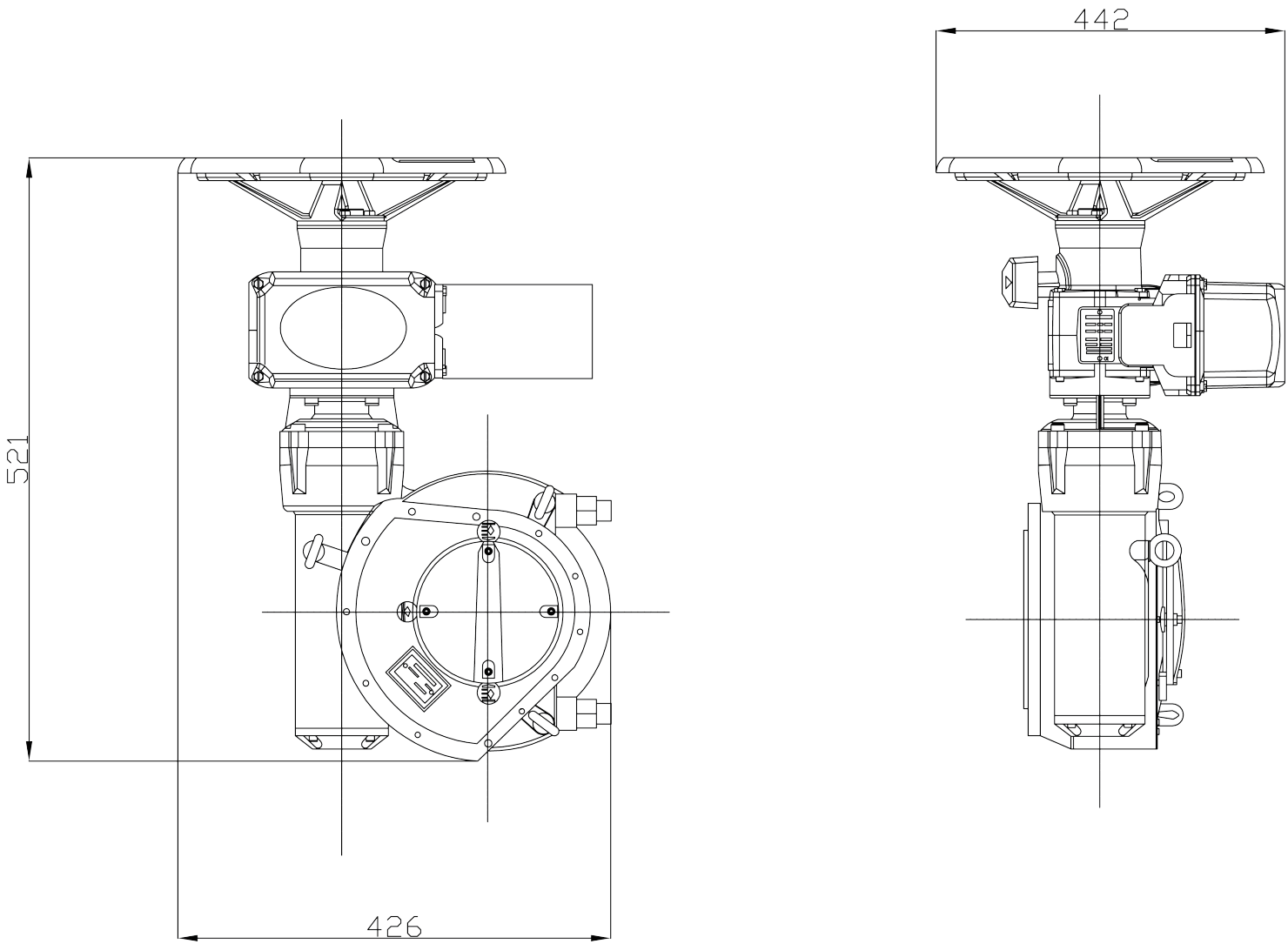
Standard dimensions



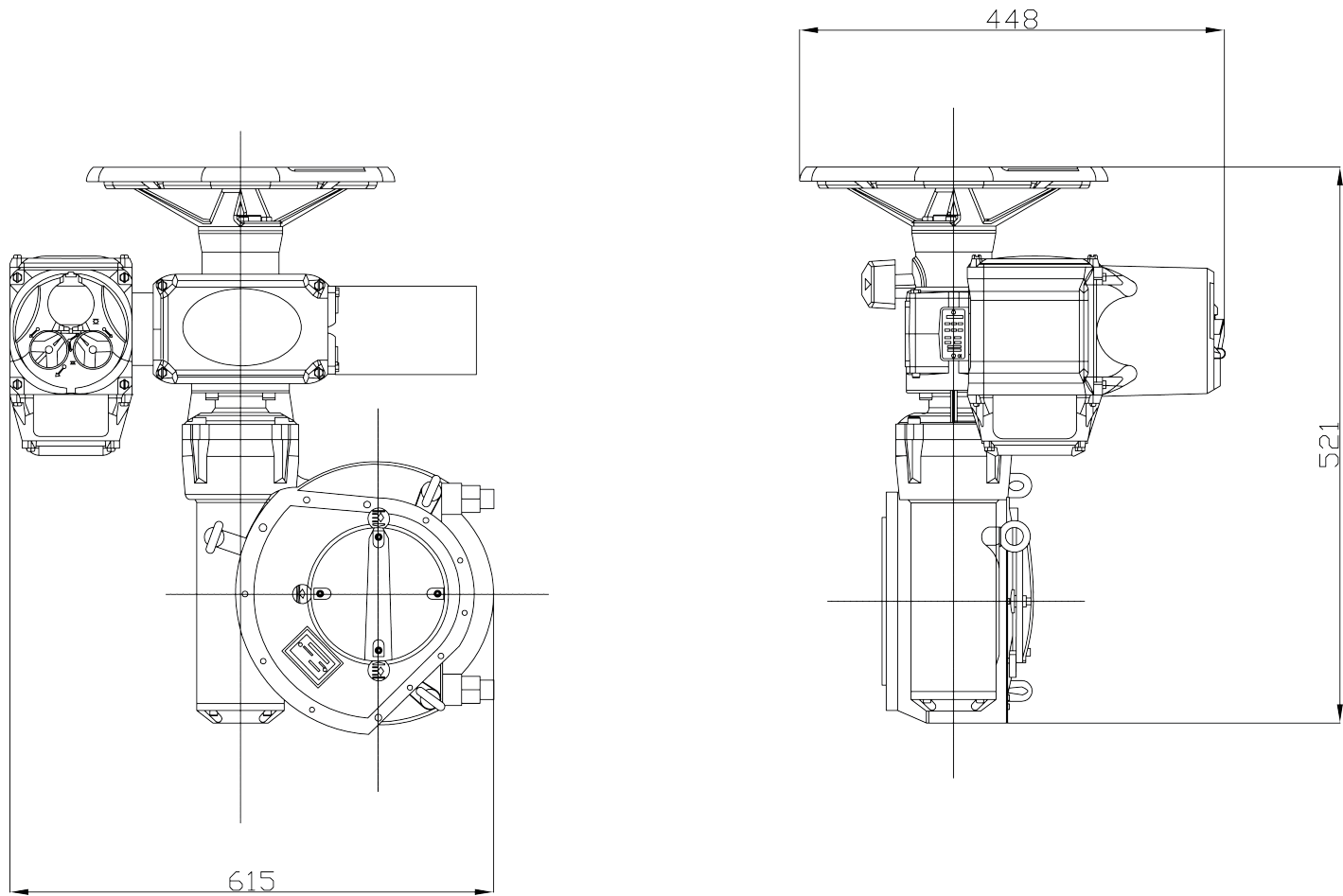
45° machining on request

INSTALLATION DIMENSIONS

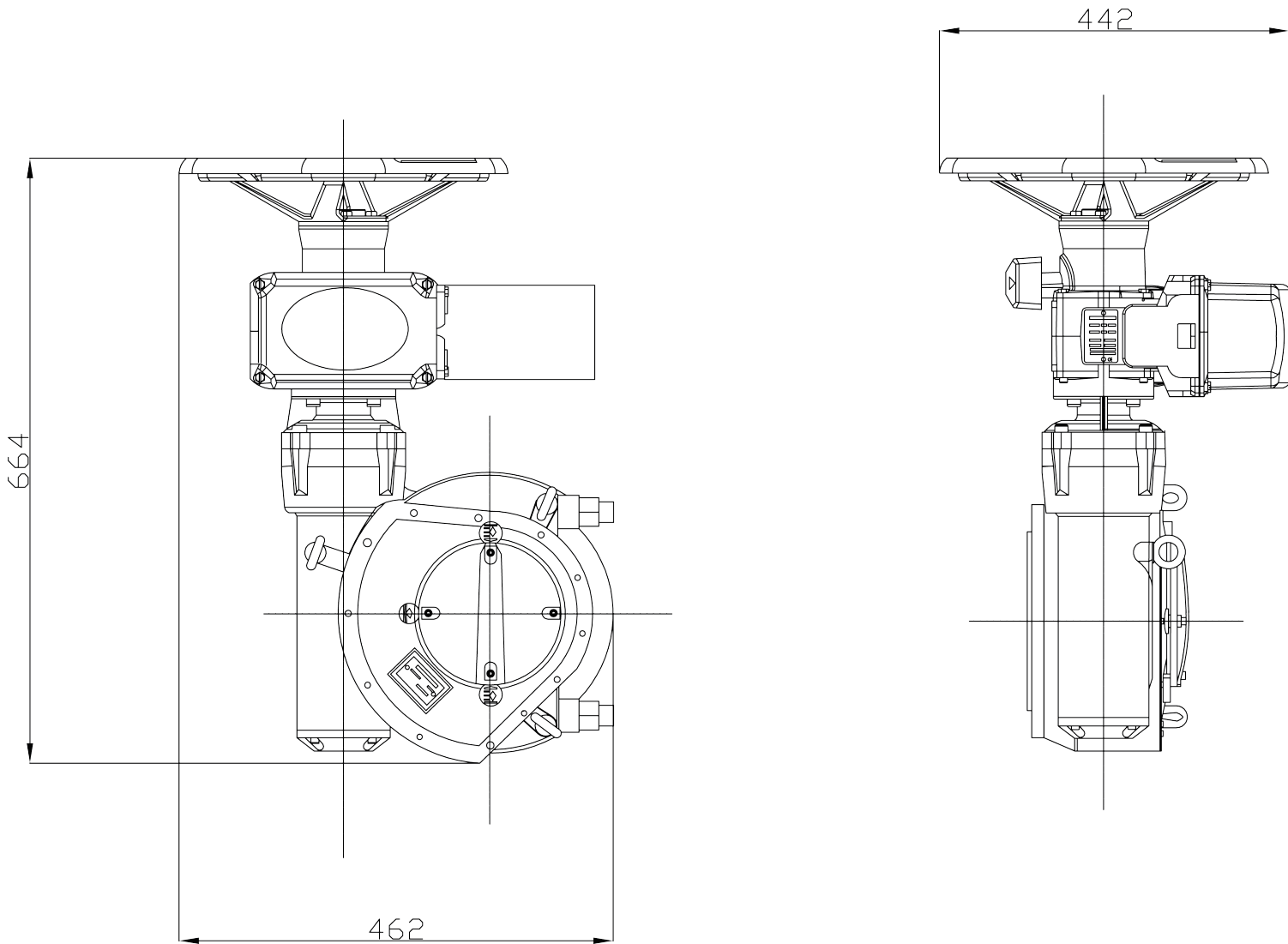
AS100 on-off type direct mounted



AS100 modulating type direct mounted

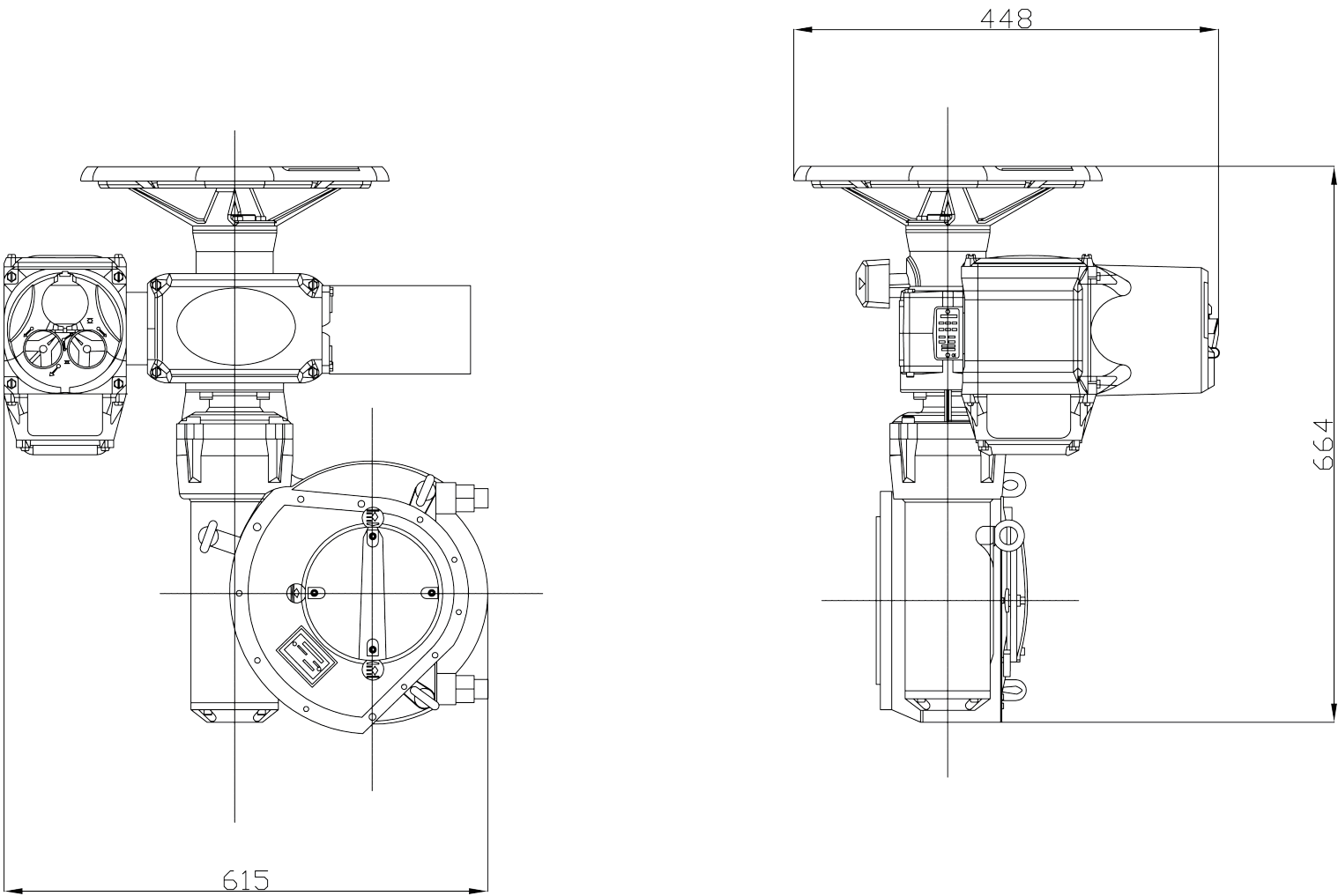


AS200 AS400 on-off type direct mounted



INSTALLATION DIMENSIONS

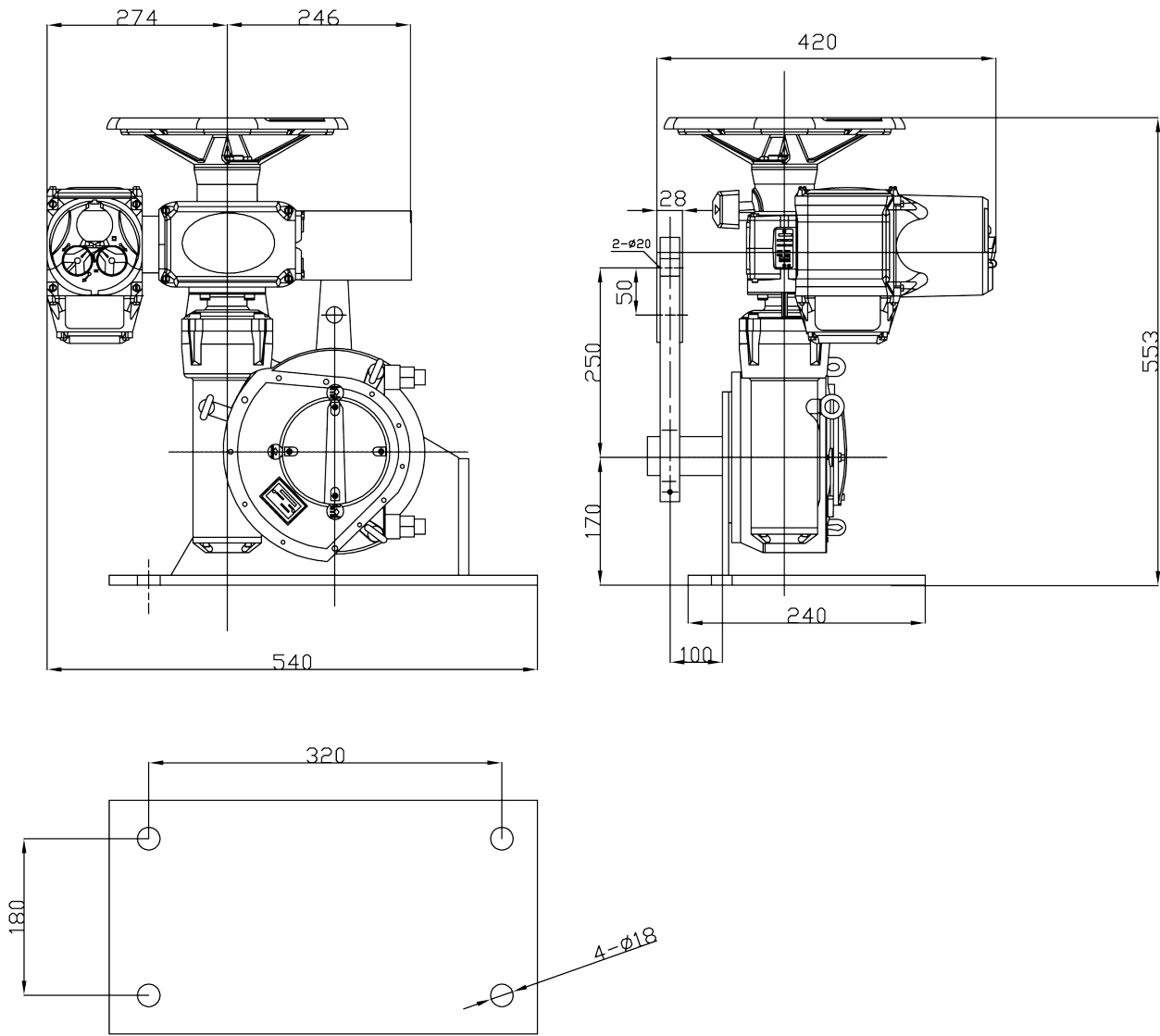
AS200 AS400 modulating type direct mounted



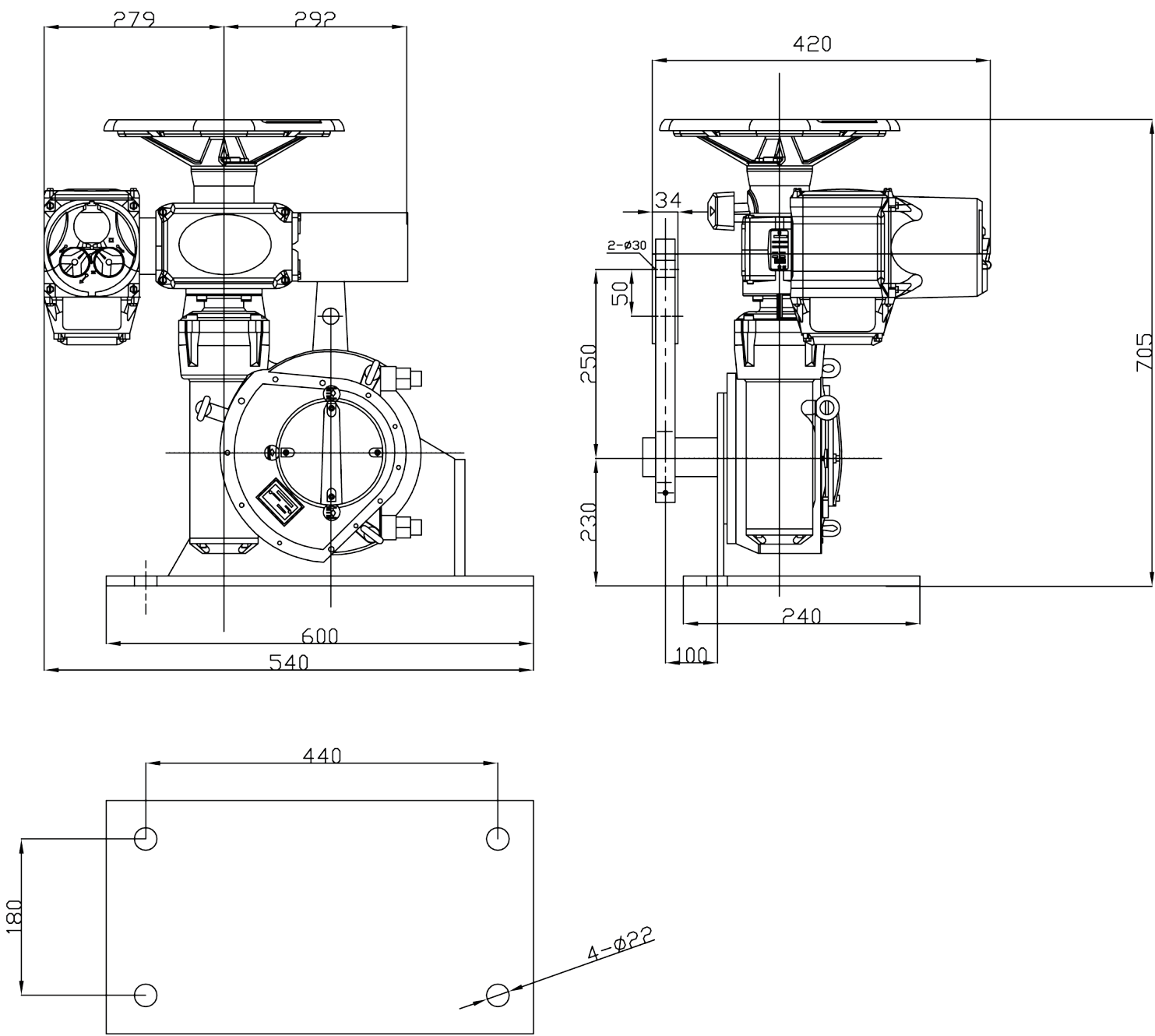
INSTALLATION DIMENSIONS

QUARTER-TURN FOOT-PLATE MOUNTED ELECTRIC ACTUATOR

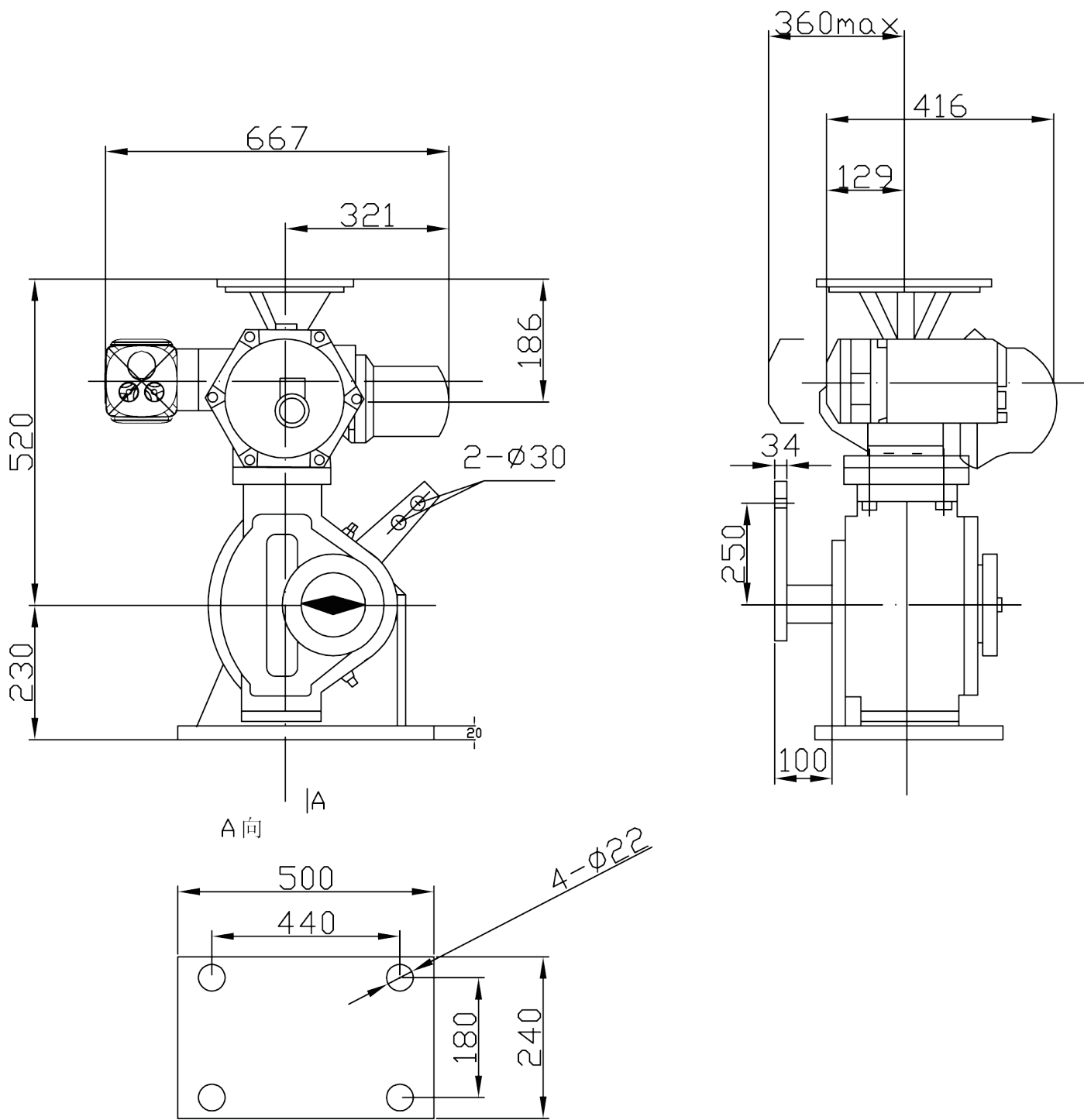
AS100 foot-plate mounted



AS200 AS400 foot-plate mounted

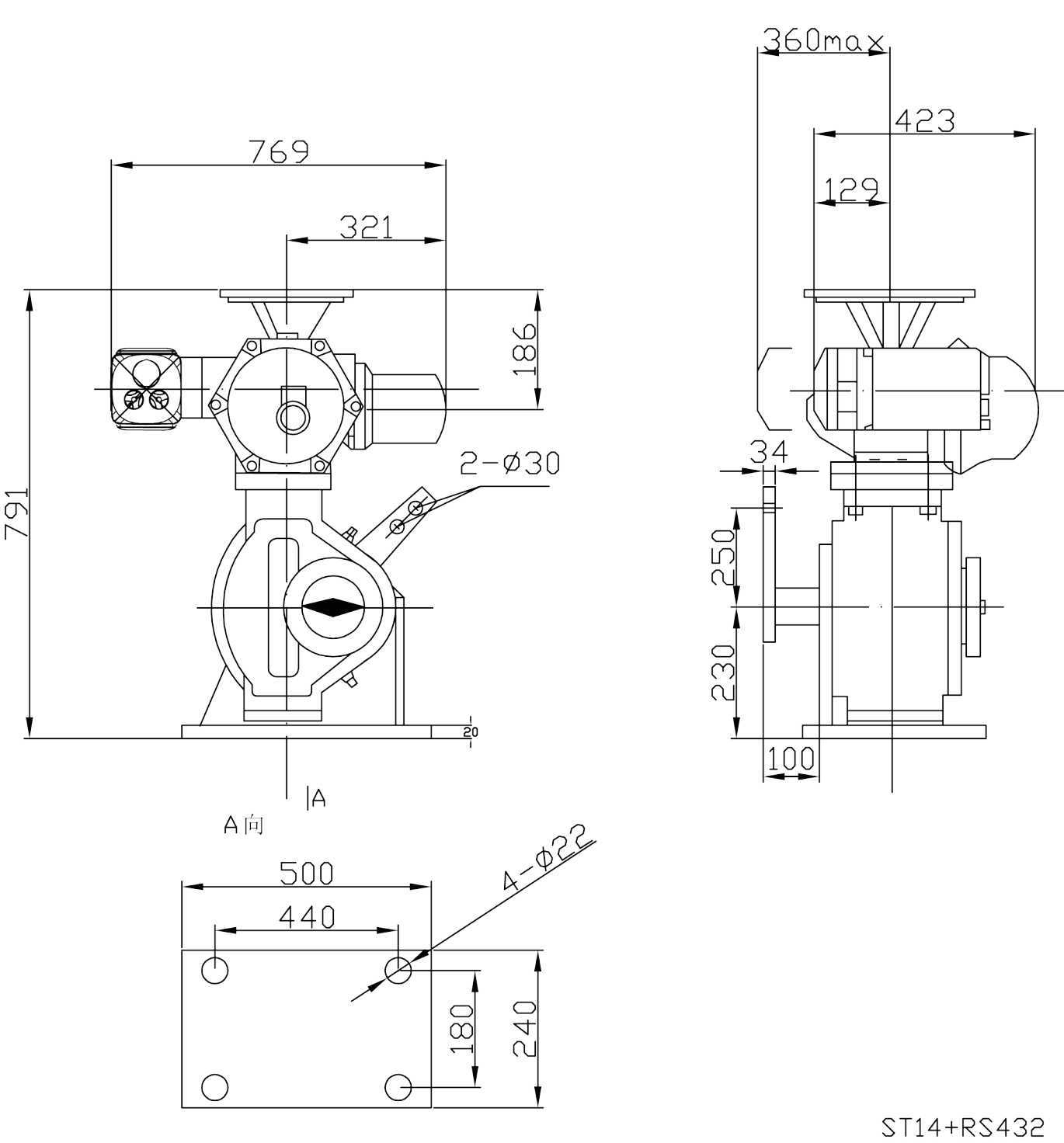


ST6+RS252 foot-plate mounted



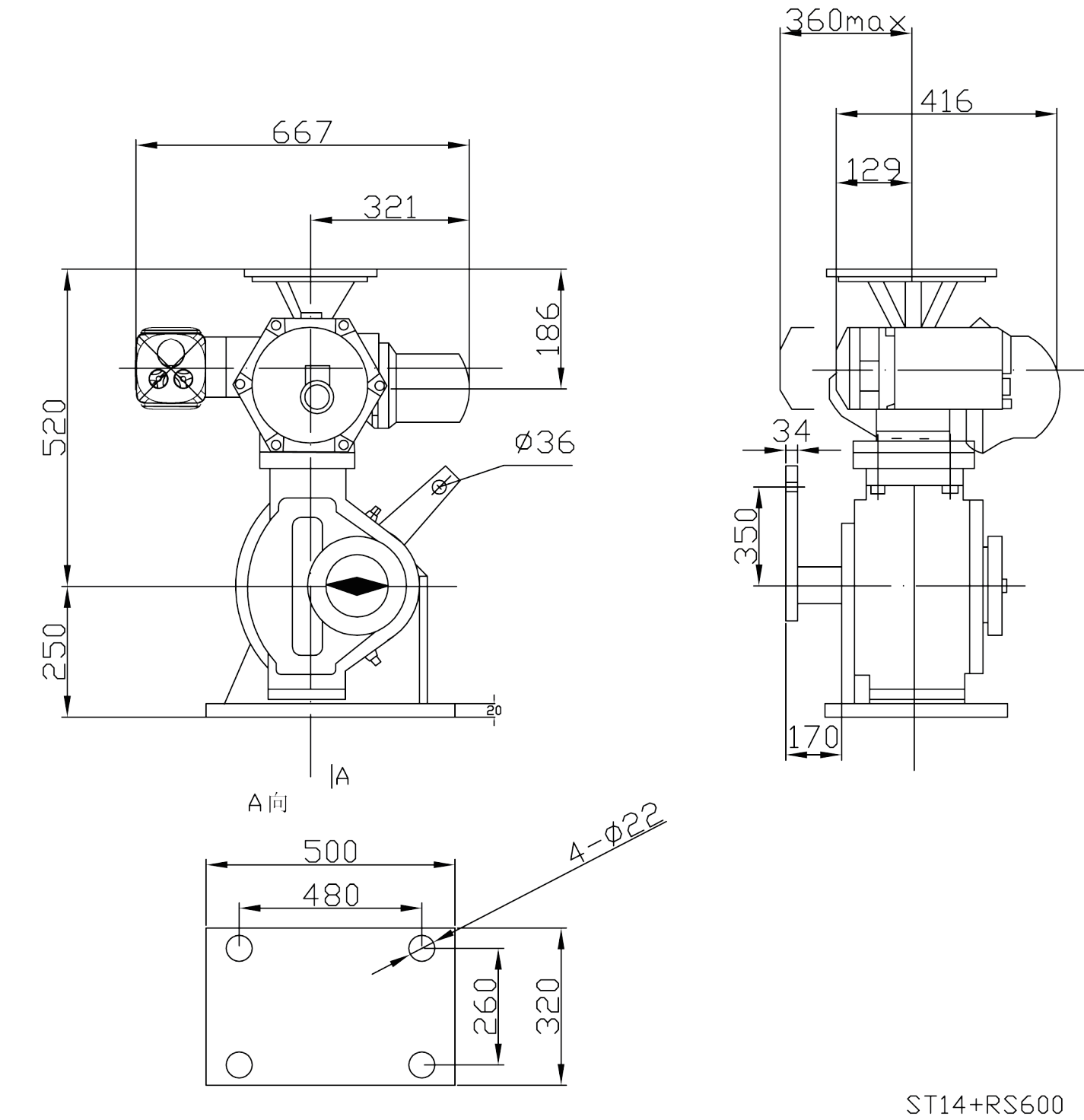
ST6+RS252

ST14+RS432 foot-plate mounted



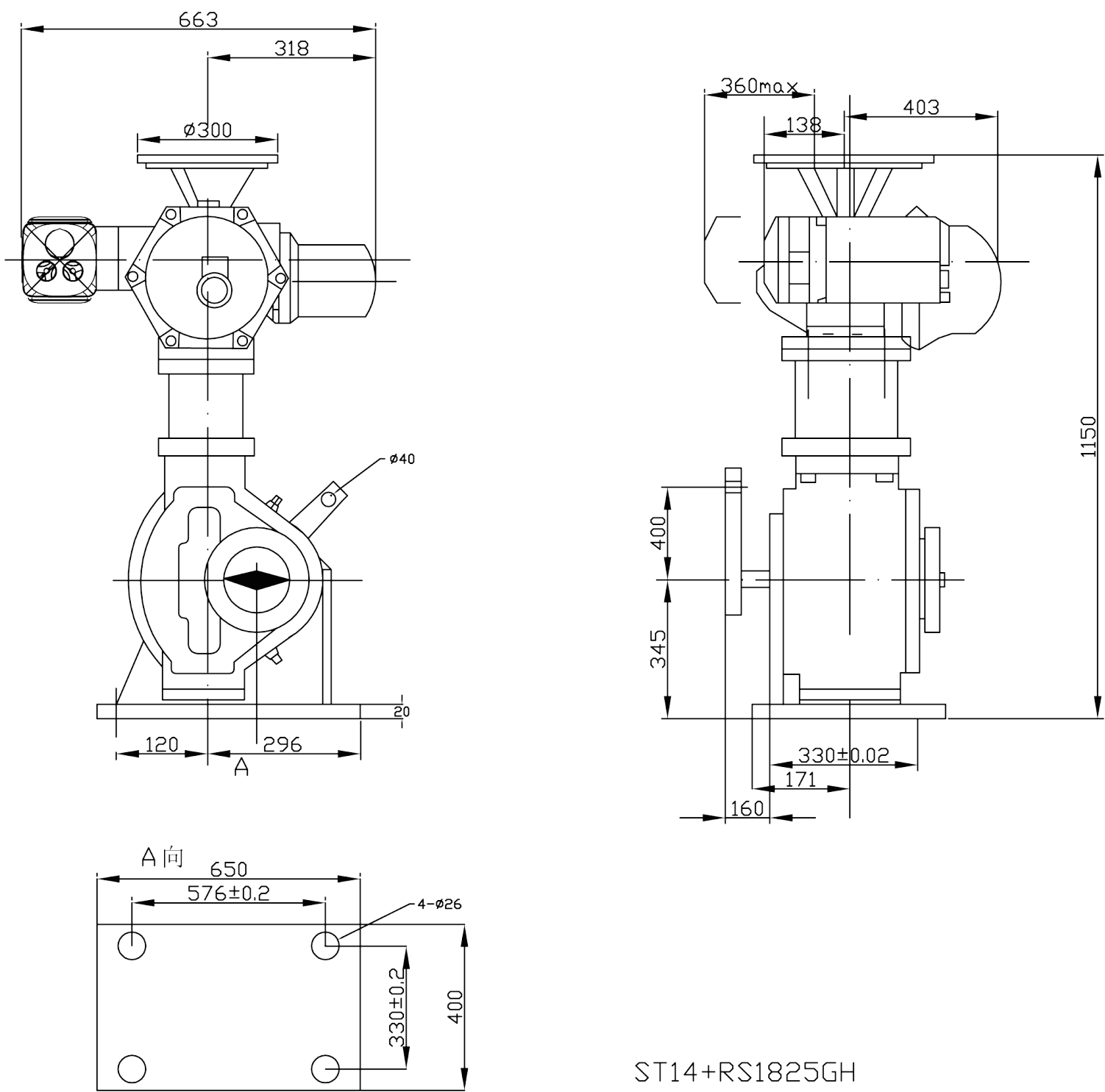
ST14+RS432

ST14+RS600 foot-plate mounted



ST14+RS600

ST14+RS1825G foot-plate mounted



ST14+RS1825GH

Electric actuator field applications

