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SMART PUMP DRIVE

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# Company Profile

19 Years

Established in 2005

1000+

Global Employees

28%+

R&D Professionals<sup>①</sup>

282+

Patents & Software Publications

5

R&D & Manufacturing Centers

80+

Export Countries and Regions

520,000 Sets

Production Capacity  
(Sets of VFD/Year)

9GW

Production Capacity  
(Inverters/Year)

TOP 4

Global Shipments of  
Residential Energy Storage<sup>②</sup>

SAJ was established in 2005, focusing on providing users with higher safety, efficiency and profitability full-scene smart energy storage solutions that integrate power generation, energy storage, power consumption, and energy operations service, as well as industrial automation products and solutions. Through our advanced battery management, energy conversion, energy storage equipment integration, smart energy storage management, and smart energy storage operation, achieve our goal of growing the energy storage value. We serve partners and end-users who recognize professional brands and smart energy management, and are committed to becoming a global leader in smart energy storage.

① Data as of June 2023

② Data from EESA: TOP 4 - Global Shipments of Residential Energy Storage Systems (Battery) by Chinese Enterprises in 2022



# PDG10

## DRIVES FOR PUMPS AND WATER TREATMENT



**Power Range**  
Single Phase 220V: 0.75-2.2kW  
Three Phase 380V: 0.75-400kW

### Specially Designed

- Fully functional for water supply
- High expansibility of cabinet mounting
- Rotation Model in 2 pumps using 1 inverter

### Perfect Protection

- Overcurrent, overvoltage, overheating, short circuit protection
- Automatic resetting
- Motor output short circuit protection
- High/Low water pressure, anti-idling, anti-freezing protection

### Reliable Performance

- Ensure stability for long time running
- Completed quality control process
- Independent air duct design, Standard temperature rise design.
- Core components from premium brands, advanced designed platform

### Flexible Compatibility

- Two channels of communication are standard.
- Available for both local networking and host computer control
- Two channels of relays output.

## SPECIFICATION

Technical Specification		
Control Feature	Control Mode	V/F Control
	Starting Torque	1Hz 100%
	Speed Ratio	1:20
	Speed Accuracy	±1.0%
	Carrier Frequency	0.5kHz ~ 16kHz
	Overload	120% rated current 60s,150% rated current 1s
Running Control	Input Voltage	• AC 1PH 220V (±15%)    • AC 3PH 380V (±15%)
	Input Frequency	50 or 60Hz (±5%)
	Output Voltage	0-Input voltage, Tolerance < 5%
	Output Frequency	V/F:0-100Hz
	3 Command Channels	• Operation panel setting    • Control terminal setting • Serial communication port setting Shifting between setting combinations and channels are available
	Frequency Source	Data Setting/Panel pulse potentiometer/Analog voltage/Analog current/Serial communication etc.    Shifting between different sources are available
	Analog Output	3 Channels: 0~5V, 0~10V, 0~24V, suitable for most sensors
	Channel	• 2 Digital input channels    • 1 Analog input channel • 2 Relay outputs    • 2 communication interfaces
Basic Function	Built-in PID	The closed-loop control can be realized conveniently.
	AVR function	Automatically keep the output voltage constant in case of voltage fluctuation
	Over voltage/Over current stall	Automatically limit current and voltage in running, to prevent frequent overcurrent and overvoltage tripping
	Fast current limiting function	Prevent faults of overcurrent and improve system stability
	Safety self-check for power-on external device	To achieve safety detection of external devices, such as grounding, short circuit, etc
	Auto-start function	• Automatically start when power-on    • Adjustable start-up delay
	Rotation in 2 pumps using 1 inverter	The function of one machine driving two pumps can be realized through the cooperation of software and relays
	Energy Saving Method	Automatically reduce output voltage in condition of light loading for energy saving
	Constant Pressure Control function	PID control, PID disconnection check, PID on & off
	Antifreeze function	The frequency, time and cycle can be set for antifreeze function
Display & Keyboard	LED display	Can display feedback pressure, target pressure, operating frequency, operating current and other data
	Parameter Lock function	To define the lock of parameters in the running or stopping state, in case of misoperation
Environment	Place	Indoor, no direct sunlight/dust/corrosive gas/flammable gas/oil mist/water vapor/dripping water/salt etc
	Altitude	• < 1000m    • if >1000m, please derate 1% by every 100m rising
	Ambient temperature	• -10°C ~ 40°C    • if exceeding 40°C, please derate 1% by every 1°C increasing • Maximum ambient temperature is 50°C
	Humidity	≤95%RH, to avoid condensation
	Vibration	Vibration acceleration is less than 0.6g
	Storage Temperature	-25°C ~ +60°C



SELECTION GUIDE

PDG10 – 4 T 004B/5R5P-E

Series: PDG10

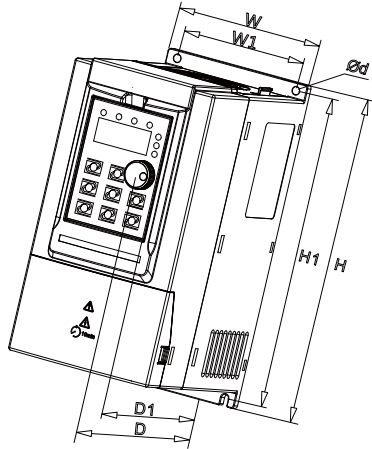
Voltage: 2: 220V; 4: 380V

Applicable Motor Power: 004=4kW  
B=Convert from VM1000B platform  
P=Variable torque loading

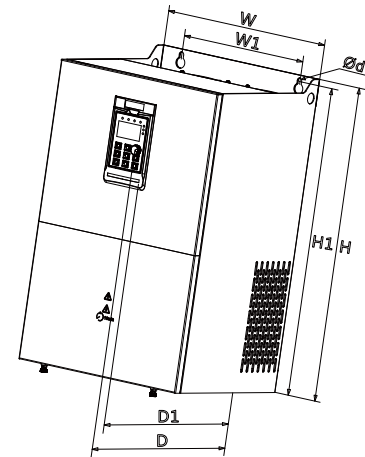
Phase: S=Single Phase; T= Three Phases

Item Code	Rated Power (kW)	Power Capacity (kVA)	Input Current (A)	Output Current (A)	Applicable Motor Power G/P	
					kW	HP
Single Phase 220V						
PDG10-2SR75B-E	0.75	1.5	8.2	4.5	0.75	1
PDG10-2S1R5B-E	1.5	3	14	7	1.5	2
PDG10-2S2R2B-E	2.2	4	23	9.6	2.2	3
Three Phase 380V						
PDG10-4TR75B-E	0.75	1.5	3.4	2.5	0.75	1
PDG10-4T1R5B-E	1.5	3	5.0	3.8	1.5	2
PDG10-4T2R2B-E	2.2	4	5.8	5.1	2.2	3
PDG10-4T004B/5R5P-E	4/5.5	5.9/8.9	10.5/14.6	9/13	4/5.5	5.5/7.5
PDG10-4T5R5B/7R5P-E	5.5/7.5	8.9/11	14.6/20.5	13/17	5.5/7.5	7.5/10
PDG10-4T7R5B-E	7.5	11	20.5	17	7.5	10
PDG10-4T011B/015P-E	11/15	17/21	26/35	25/32	11/15	15/20
PDG10-4T015B/018R5P-E	15/18.5	21/24	35/38.5	32/37	15/18.5	20/25
PDG10-4T018R5B/022P-E	18.5/22	24/30	38.5/46	37/45	18.5/22	25/30
PDG10-4T022B/030P-E	22/30	30/40	46.5/62	45/60	22/30	30/40
PDG10-4T030B/037P-E	30/37	40/57	62/76	60/75	30/37	40/50
PDG10-4T037B/045P-E	37/45	57/69	76/92	75/91	37/45	50/60
PDG10-4T045B/055P-E	45/55	69/85	92/113	91/110	45/55	60/70
PDG10-4T055B/075P-E	55/75	85/114	113/157	112/150	55/75	70/100
PDG10-4T075B/093P-E	75/93	114/134	157/180	150/170	75/93	100/125
PDG10-4T093B/110P-E	93/110	134/160	180/214	170/210	93/110	125/150
PDG10-4T110B/132P-E	110/132	160/192	214/256	210/253	110/132	150/180
PDG10-4T132B/160P-E	132/160	192/231	256/307	253/304	132/160	180/220
PDG10-4T160B/185P-E	160/185	231/245	307/345	304/340	160/185	220/250
PDG10-4T185B/200P-E	185/200	245/260	345/385	340/377	185/200	250/275
PDG10-4T200B/220P-E	200/220	260/280	385/430	377/426	200/220	275/300
PDG10-4T220B/250P-E	220/250	280/355	430/468	426/465	220/250	300/340
PDG10-4T250B/280P-E	250/280	355/396	468/525	465/520	250/280	340/380
PDG10-4T280B/315P-E	280/315	396/445	525/590	520/585	280/315	380/430
PDG10-4T315B/355P-E	315/355	445/500	590/665	585/650	315/355	430/480
PDG10-4T355B/400P-E	355/400	500/565	665/785	650/725	355/400	480/545
PDG10-4T400B-E	400	565	785	725	400	545

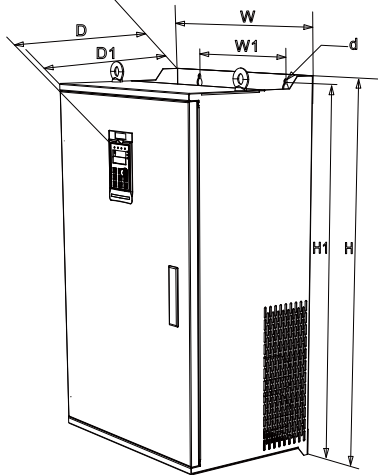
DIMENSION (UNIT: MM)



Item Code	Overall Dimension				Installation Dimension		Mounting Hole
	H	W	D	D1	H1	W1	d
PDG10-2SR75B-E	187	88	138	130	177	73	5
PDG10-2S1R5B-E							
PDG10-2S2R2B-E							
PDG10-4TR75B-E							
PDG10-4T1R5B-E							
PDG10-4T2R2B-E							
PDG10-4T004B/5R5P-E	207	100	147	139	197	85	5
PDG10-4T5R5B/7R5P-E	247	130	167	159	237	113	5
PDG10-4T7R5B-E							



Item Code	Overall Dimension				Installation Dimension		Mounting Hole
	H	W	D	D1	H1	W1	d
PDG10-4T011B/015P-E	348	182	211	196	331	156	6
PDG10-4T015B/018R5P-E							
PDG10-4T018R5B/022P-E	373	220	205	190	356	156	6
PDG10-4T022B/030P-E							
PDG10-4T030B/037P-E	435	256	222	208	419	170	6
PDG10-4T037B/045P-E							
PDG10-4T045B/055P-E	543	310	280	265	523	245	10
PDG10-4T055B/075P-E							
PDG10-4T075B/093P-E	580	358	328	314	560	270	10
PDG10-4T093B/110P-E							
PDG10-4T110B/132P-E							



Item Code	Overall Dimension				Installation Dimension		Mounting Hole
	H	W	D	D1	H1	W1	d
PDG10-4T132B/160P-E	869	502	355	342	842	320	10
PDG10-4T160B/185P-E							
PDG10-4T185B/200P-E							
PDG10-4T200B/220P-E	1175	600	408	398	1147	400	12
PDG10-4T220B/250P-E							
PDG10-4T250B/280P-E							
PDG10-4T280B/315P-E	1300	800	408	398	1266	520	12
PDG10-4T315B/355P-E							
PDG10-4T355B/400P-E							
PDG10-4T400B-E							



PDG10 APPLICATION



Water purifying



Circulating water supply system



Industrial water supply



Water for construction



Water treatment



Sports and entertainment center



# PDH30

## DRIVES FOR CONSTANT PRESSURE WATER SUPPLY



**Power Range**  
Single Phase 220V: 2.2kW  
Three Phase 380V: 0.75-18.5kW

### Safety and Reliability

- Constant pressure for water supply
- IP54 for waterproof and dustproof
- Motor output short circuit protection
- Overvoltage, overvoltage, overheating, short circuit protection

### Smart Control

- Wide power ranges
- Steady output with low noise
- Advanced PID algorithms
- Compatible with synchronous and asynchronous motor

### Flexible Compatibility

- 2 way communication protocol: RS485+CAN
- Abundant interface, including 2 analog input
- 3 power supply for sensors
- Available for both local networking and host computer control

### Humanized Design

- Knapsack mount fits better
- Appearance flat design, fashion generous
- Cable box type design for fast connection

## SPECIFICATION

Technical Specification		
Control Feature	Control Mode	V/F Control
	Starting Torque	1Hz 100%
	Speed Ratio	1:20
	Speed Accuracy	±1.0%
	Carrier Frequency	0.5kHz ~ 16kHz
	Overload	120% rated current 60s, 150% rated current 1s
Running Control	Input Voltage	• AC 1PH 220V (±15%) • AC 3PH 380V (±15%)
	Input Frequency	50 or 60Hz (±5%)
	Output Voltage	0-Input voltage, Tolerance < 5%
	Output Frequency	V/F: 0-100Hz
	3 Command Channels	• Operation panel setting • Control terminal setting • Serial interface setting Shifting between setting combinations and channels are available
	Frequency Source	Data Setting/Panel pulse potentiometer/Analog voltage/Analog current/Serial communication etc. Shifting between different sources are available
	Analog Output	3 Channels: 0~5V, 0~10V, 0~24V, suitable for most sensors
	Input Channel	• 3 Digital input channels • 2 Analog input channels • 2 communication channels: RS485+CAN
Control Feature	Output Channel	• 1 digital output channel • 1 group of relay output channels
	Built-in PID	To achieve closed-loop control
	AVR function	Automatically keep the output voltage constant in case of voltage fluctuation
	Over voltage/Over current stall	Automatically limit current and voltage in running, to prevent frequent overcurrent and overvoltage tripping
	Fast current limiting function	Prevent faults of overcurrent and improve system stability
	Safety self-check for power-on external device	To achieve safety detection of external devices, such as grounding, short circuit, etc.
	Auto-start function	• Automatically start when power-on • Adjustable start-up delay
	Energy Saving Method	Automatically reduce output voltage in condition of light loading for energy saving
	Constant Pressure Control function	PID control, PID disconnection check, PID on & off
	Connected Method	Devices can be connected and communicated with each other to achieve control of multi-pumps
	Host computer communication	Remote equipment maintenance can be achieved through an external GPRS monitoring module
	Antifreeze function	The frequency, time and cycle can be set for antifreeze function
	Leakage detection	To improve the standby method by detection of leakage factor
Display & Keyboard	LED display	Including data of feedback pressure, target pressure, operating frequency, operating current ect.
	Parameter Lock function	To define the lock of parameters in the running or stopping state, in case of misoperation
Environment	Place	Indoor, no direct sunlight/dust/corrosive gas/flammable gas/oil mist/water vapor/dripping water/salt etc.
	Altitude	• < 1000m; • if >1000m, please derate 1% by every 100m rising
	Ambient temperature	• -10°C ~ 40°C; • if exceeding 40°C, please derate 1% by every 1°C increasing • Maximum ambient temperature is 50°C
	Humidity	≤95%RH, to avoid condensation
	Vibration	Vibration acceleration is less than 0.6g
	Storage Temperature	-25°C ~ +60°C



/// SELECTION GUIDE

PDH30 – 4 T 1R5-E

Series: PDH30

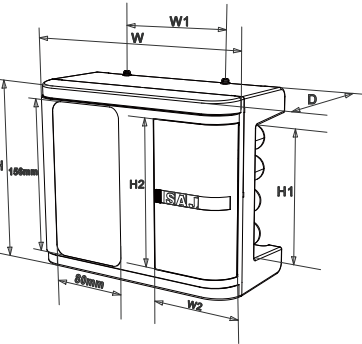
Voltage: 2:220V; 4: 380V

Applicable Motor Power: 1R5=1.5kW

Phase: S=Single Phase; T= Three Phases

Item Code	Rated Power (kW)	Power Capacity (kVA)	Input Current (A)	Output Current (A)	Applicable Motor Power G/P	
					kW	HP
PDH30-2S2R2-E	2.2	4	23	9.6	2.2	3
PDH30-4TR75-E	0.75	1.5	3.4	2.1	0.75	1
PDH30-4T1R5-E	1.5	3	5	3.8	1.5	2
PDH30-4T2R2-E	2.2	4	5.8	5.1	2.2	3
PDH30-4T004-E	4	5.9	10.5	9	4	5.5
PDH30-4T5R5-E	5.5	8.9	14.6	13	5.5	7.5
PDH30-4T7R5-E	7.5	11	20.5	17	7.5	10
PDH30-4T011-E	11	17	26	25	11	15
PDH30-4T015-E	15	21	35	32	15	20
PDH30-4T018R5-E	18.5	24	38.5	37	18.5	25

/// DIMENSION (UNIT: MM)



Item Code	Dimension				Flange Mounting		
	H	H1	H2	W	W2	D	W1
PDH30-2S2R2-E	187.5	127.5	144	225	76.5	114	120
PDH30-4TR75-E							
PDH30-4T1R5-E							
PDH30-4T2R2-E							
PDH30-4T004-E	212	135	156.5	257	90.5	124	159.5
PDH30-4T5R5-E							
PDH30-4T7R5-E							
PDH30-4T011-E	276	169	191	312	121.5	146.5	140
PDH30-4T015-E							
PDH30-4T018R5-E							

/// PDH30 APPLICATION



School water supply



Water supply to shopping malls



Water supply for domestic dwellings



# PDM30

## DRIVES FOR RESIDENTIAL WATER SUPPLY



**Power Range**  
Single Phase 220V: 0.75-2.2kW

### Fashion Appearance

- ABS fire-resistance covers
- Elegant curves
- User-friendly keyboard design, easy to operate
- Integrated Design, the appearance of more fit

### Flexible Compatibility

- RS485 Interface
- Available for local networking
- Compatible for both current and voltage analog input

### Outstanding Performance

- Advanced PID algorithms
- Low noise output
- optimized current sampling scheme
- Progressive hardware

### High Efficiency Cooling

- Sinking ventilation system
- Fast-speed fans
- High-quality fan

## SPECIFICATION

Technical Specification		
Control Feature	Control Mode	V/F Control
	Starting Torque	1Hz 100%
	Speed Ratio	1:20
	Speed Accuracy	±1.0%
	Carrier Frequency	0.5kHz ~ 16kHz
	Overload	120% rated current 60s, 150% rated current 1s
Running Control	Input Voltage	· AC 1PH 220V (±15%) · AC 3PH 380V (±15%)
	Input Frequency	50 or 60Hz (±5%)
	Output Voltage	0-Input voltage, Tolerance < 5%
	Output Frequency	V/F: 0-100Hz
	3 Command Channels	· Operation panel setting · Control terminal setting · Serial interface setting Shifting between setting combinations and channels are available
	Frequency Source	Data Setting/Panel pulse potentiometer/Analog voltage/Analog current/Serial communication etc
	Analog Output	3 Channels: 0~5V, 0~10V, 0~24V, suitable for most sensors
	Input Channel	· 3 Digital input channels · 2 Analog input channels · 2 communication channels: RS485+CAN
Control Feature	Built-in PID	To achieve closed-loop control
	AVR function	Automatically keep the output voltage constant in case of voltage fluctuation
	Over voltage/Over current stall	Automatically limit current and voltage in running, to prevent frequent overcurrent and overvoltage tripping
	Fast current limiting function	Prevent faults of overcurrent and improve system stability
	Safety self-check for power-on external device	To achieve safety detection of external devices, such as grounding, short circuit, etc
	Auto-start function	· Automatically start when power-on · Adjustable start-up delay
	Energy Saving Method	Automatically reduce output voltage in condition of light loading for energy saving
	Connected Method	Devices can be connected and commnucated with each other to achieve control of multi-pumps
	Constant Pressure Control function	PID control, PID disconnection check, PID on & off
	Antifreeze function	The frequency, time and cycle can be set for antifreeze function
Display & Keyboard	Leakage detection	To improve the standby method by detection of leakage factor
	LED display	Including data of feedback pressure, target pressure, operating frequency, operating current ect
	Parameter Lock function	To define the lock of parameters in the running or stopping state, in case of misoperation
Environment	Place	Indoor, no direct sunlight/dust/corrosive gas/flammable gas/oil mist/water vapor/dripping water/salt etc
	Altitude	· < 1000m · if >1000m, please derate 1% by every 100m rising
	Ambient temperature	· -10°C~40°C · if exceeding 40°C, please derate 1% by every 1°C increasing; · Maximum ambient temperature is 50°C
	Humidity	≤95%RH, to avoid condensation
	Vibration	Vibration acceleration is less than 0.6g
	Storage Temperature	-25°C ~ +60°C



/// SELECTION GUIDE

**PDM30 – 2 S 2R2-E**

Series: PDM30

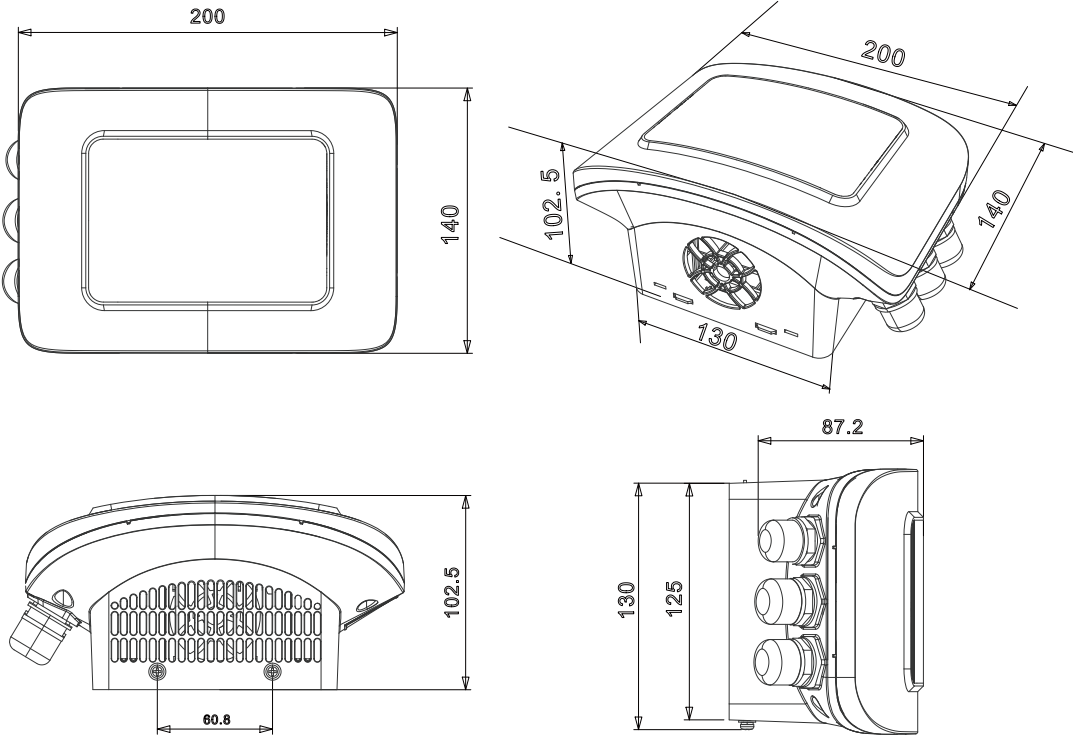
Voltage: 2=220V

Phase: S=Single Phase

Applicable Motor Power: R means decimal point  
2R2=2.2kW

Item Code	Rated Power (kW)	Power Capacity (kVA)	Output Current (A)	Applicable Motor Power G/P		Notes
				kW	HP	
PDM30-2S2R2-E	2.2	20	10	2.2	3	2=2.2kW

/// DIMENSION (UNIT: MM)



/// PDM30 APPLICATION



Water supply for the villa



Domestic water supply



Park water supply



# eSolar Pump O&M Platform



Real Time  
Monitoring



Intelligent  
Alert



Remote  
Setup



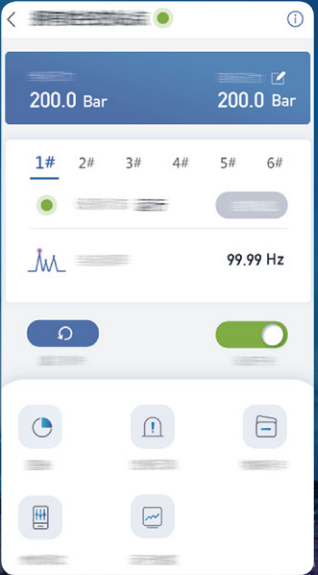
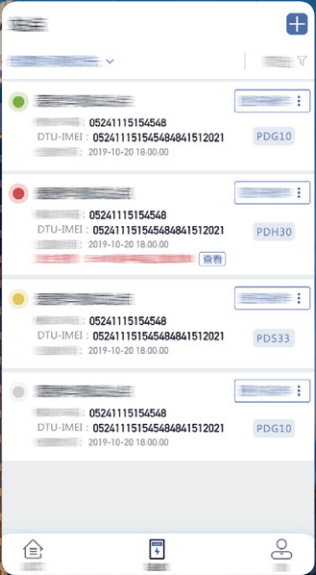
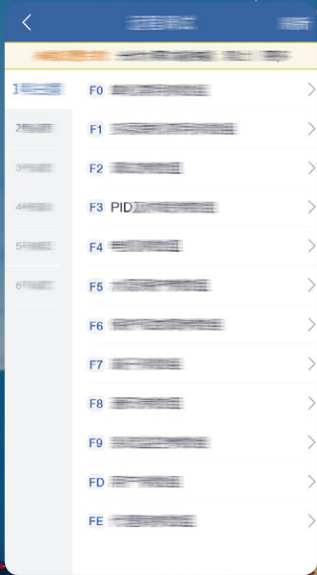
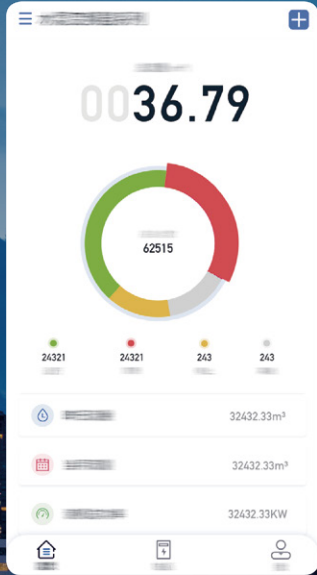
Device  
Management



Data  
Analysis



Smart  
Operation





# Global Layout

SAJ actively develops a global business layout and adopts a localized operation strategy, and establishes liaison offices in Brazil, France, Sweden, Poland, Romania, Pakistan, Turkey, India, South Africa, Egypt and other countries and regions. Its products are sold to more than 80 countries and regions, including Italy, Germany, Spain, the United Kingdom, the Netherlands, Belgium, Australia, Brazil, etc.

6  
Marketing Regions

Europe, Middle East and Africa, Asia Pacific, China, North America, South America.

9  
Subsidiary Companies

Germany, Italy, UK, Netherlands, Spain, Australia, Belgium, Hongkong, USA.

