

# SLANVERT

# SLANVERT



# SB200

[www.slanvert.com](http://www.slanvert.com)

High-performance universal frequency converter



Hope Senlan Science and Technology Holding Corp.,Ltd.

[www.slanvert.com](http://www.slanvert.com) [www.chinavvf.com](http://www.chinavvf.com)



website



Wechat

Add: No. 1599, Section 2, 2nd Airport Road, XiHangGang, Shuangliu District Chengdu Sichuan P.R. China

Service Hot-line: 400-619-6968

E-mail: [info@dlhope.com](mailto:info@dlhope.com)

Hope Senlan Science and Technology Holding Corp.,Ltd.

# C COMPANY INFO



Hope Senlan Science & Technology Corp., Ltd. is a national key high-tech enterprise dedicated to the research and development of energy conservation, environment protection, drive control, new energy, intelligent equipment and air purification system, and the design, development, production, sale and service of related products. It is a leading enterprise specialized in transmission control technology research in China. It is a well-known industrial automation control system equipment R&D and manufacturing base in China.

Since its establishment, the Company has adhered to the "science and technology-oriented" concept, implemented the brand strategy, and created a brand path that features "brand created by science and technology, improved by quality, and popularized by service". The Company has passed the ISO 9001:2015 international quality system certification, ISO 14001:2015 environmental management system certification, ISO 45001:2018 occupational health and safety management system certification, and intellectual property management system certification, fully implemented ERP information management, owned an independent intellectual property system composed of more than 100 patents and proprietary technologies, and developed SB70, HOPE800, Hope530, Hope130, SBH, and VFPS series drive control products and industrial automation products such as special power supplies, photovoltaic inverters, new energy vehicles and intelligent equipment (including robots) on this basis. With strong professional system integration capabilities, the Company customizes integrated solutions for its customers as per different requirements on industrial customer segmentation. The Company's drive control products have won lots of honors, such as Gold Medal of the Fourth China Science & Technology Exposition and Gold Medal of China Fair of Inventions & Technologies, been listed in the National Torch Program Project, National Innovation Fund Project and National Key & New Product Project, and obtained the European CE certification, American UL certification and Russian EAC certification. Our products are widely applied in many fields, such as metallurgy, machinery, building materials, chemical industry, petroleum, biochemistry, pharmacy, municipal works, electric power, light industry, equipment manufacturing, military work, etc., which bring great economic and social benefits. The Company has, for that matter, been recognized as the "2018 Chengdu 100 Key New Economic Cultivation Enterprises" by the Chengdu New Economic Development Commission.

With rapid development over the past two decades, the company now has a strong marketing and service network covering China, Asia, Europe and America, providing high-quality products and services for its customers. At present, the company ranks the top in terms of sales volume, market share and technical level in the electrical automation industry. In 2007, the company obtained the title "Chinese Famous Brand" granted by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China. In 2005~2012, the company's drive control products were chosen as "Domestic Well-known Inverter in China" by Chinese Association of Automation for seven years in a row. In 2008, 2009, 2011, 2013, 2014, 2016, 2019 and 2021, the company was awarded "the Most Influential Brand in China Electrical Appliance Industry" by China Electrical Equipment Industrial Association. In December 2013, the registered trademark "Hope Senlan" was identified as "Chinese Well-known Trademarks" by the SAIC. In April 2015, Hope Senlan was respectively awarded as the "Satisfactory Benchmarking Enterprise of the Users of Chinese Electrical Appliance Industry" and the "Leading Brand in Chinese Electrical Appliance Industry" respectively by China Electrical Equipment Industrial Association. In April 2016, the company's "Integrated Solution for Variable Frequency Drive of Extra-long Belt Conveyor" won the title "Top Ten Most Influential Automation Engineering Projects of 2015". In May 2016, Hope Senlan's SB200, SB70, HOPE800 and EPS power supply series were listed in the "2016 Chengdu Famous and Excellent Rail Transit Product Catalog". In March 2017, Hope Senlan was awarded the product title "Sichuan Famous Brand" issued by the People's Government of Sichuan Province. In April 2017, Hope Senlan won the "Sichuan Provincial Well-known Trademark" issued by Sichuan Provincial Administration for Industry and Commerce; Hope Senlan's "Integration Solution for Frequency Conversion Renovation of Feed Pump of Large-scale Thermal Power Generating Boiler" was awarded as the "2016 Top Ten Most Valuable Solutions"; and the company's "Intelligent Port VFPS Series Ship Shore-based Power Supply Solution" is awarded as "2016 Top Ten Most Influential Engineering Projects". In December 2017, Hope Senlan won the "Chengdu Shuangliu District Government Quality Award" issued by the government of Shuangliu District, Chengdu and was awarded the title "Sichuan Provincial Site Management Star Rating Five-star Site" issued by the Sichuan Association for Quality. It participated as a major member in the preparation and amendment of the national standards and IEC standards for adjustable speed electrical drive systems. In 2014, 2019 and 2020, the company was chosen as "Advanced Standardization Work Unit" by the National Technical Committee on Variable Frequency Regulating Speed Equipment of Standardization Administration of China. In 2014-2022, the company was awarded as "China's Top 10 Automation Companies of the Year" by the Chinese Association of Automation. On July 19, 2021, Hope Senlan was listed in the third batch of "Little Giant" enterprises featuring expertise, precision, specialty, and innovation of the Ministry of Industry and Information Technology. In April 2022, the Jiangsu Jintan Salt Cave Compressed Air Energy Storage Project was awarded the "2022 Most Influential Engineering Project".

Adhering to the business philosophy of "excellence without borders, hope infinite", and looking into the future, the company's development goal is to become the world's most leading-edge R&D and manufacturing base for the industrial automation control system, develop Hope Senlan into an internationally renowned brand, and become an internationally leading enterprise in the fields of energy conservation, environment protection, drive control, new energy and intelligent equipment!

Welcome to visit our website [http://www.slanvert.com\(English\)](http://www.slanvert.com(English))  
to know more about us and our products

## Qualification List

- UL Certificate
- ISO9001 international quality system certified
- ISO14001 environmental management system certified
- ISO45001 occupational health and safety management system
- Russian EAC certification
- EU CE certified



CERTIFICATE OF PARTICIPATION  
Issued by  
UL CCIC on behalf of  
UL

HOPE SENLAN SCIENCE AND TECHNOLOGY HOLDING CORP.,LTD  
No.1599, Konggang Erlu, Southwest Airport Economic Development  
Chengdu, 610207, China  
has been assessed and found eligible to participate in  
UL  
WITNESS TEST DATA PROGRAM

Party Site No: 1056762  
Issued: May 07, 2015  
Expire: May 06, 2016

Mary Yao  
Mary Yao  
Engineering Manager  
UL CCIC



## Contents

Product Overview	03
Basic wiring diagram	04
Common Technical Specification	05
Terminal Function	06
Selection Guide	07





## Product Overview

### Extremely High Reliability

Reliability is an inherent quality of SB200. Since SB200 is a high-performance universal frequency converter elaborately designed by Slanvert on a high-end technology platform, it is produced by using branded power devices and through proven process flow. Before leaving the factory, each frequency converter is subject to aging and full-load testing.

### Outstanding Brand Strength

Slanvert is ranked in the first enterprise named as "China Top Brand" in frequency inverter industry, Slanvert frequency inverter is awarded "No. 1 Domestic Frequency Inverter in China" by Chinese Association of Automation for 7 consecutive times, and also it is selected as "the No. 1 inverter among top ten domestic frequency inverters satisfied by Chinese users (including Hong Kong, Macao and Taiwan) in 2006" by China Research Institute of Mechanical Information Engineering. In December 2013, the registered trademark "Hope Senlan" was identified as "Chinese Well-known Trademarks" by the SAIC.

### Sound Service System

The powerful marketing and service network systems have been established by Slanvert around the country to support each frequency inverter manufactured by our company. Including system scheme demonstration/design, frequency inverter installation, commissioning, after-sales service and training, users will get steward type services provided by Slanvert in every detail.

### Application Fields

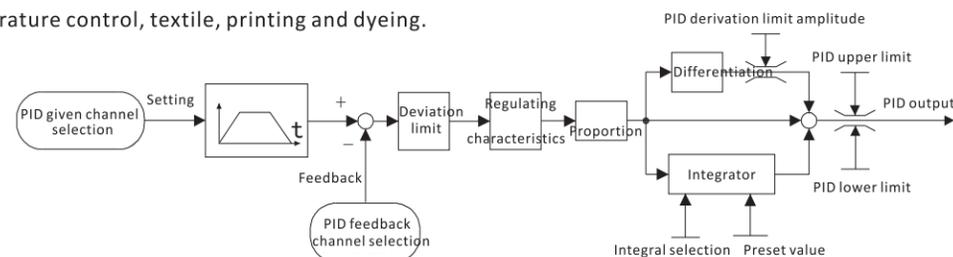
It is extensively used in textiles, printing and dyeing, washing, cables, packing, machinery, ceramics, constant-pressure water supply, constant-temperature control, or various OEMs.

### Product Features

- High-performance optimized space voltage vector V/F algorithm with high efficiency, low noise and low electromagnetic interference
- With 1.5-22kW built-in braking unit, only braking resistor is enough
- High-performance PID with bipolar and correction function, convenient for closed-loop control
- Speed tracking startup function, centrifuge, dehydrator and other loads can be started at any time
- Built-in special software for constant-pressure water supply, achieving one control and two cycle switching of constant-pressure water supply system without the need for unit expansion
- Configurable English/Chinese LCD operating panel with friendly interface
- Real-time clock control

### Powerful process PID function:

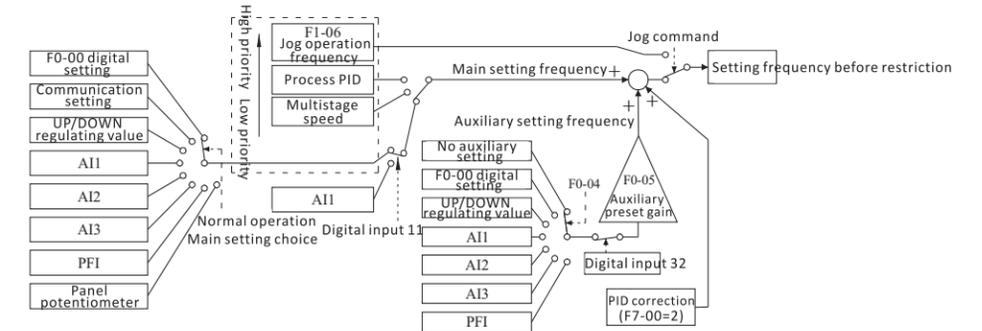
Two sets of parameters can be used for parameter transition based on operating frequency and control error, with multiple correction modes to meet the industrial needs, such as constant-pressure water supply, constant-temperature control, textile, printing and dyeing.



Process PID structure diagram

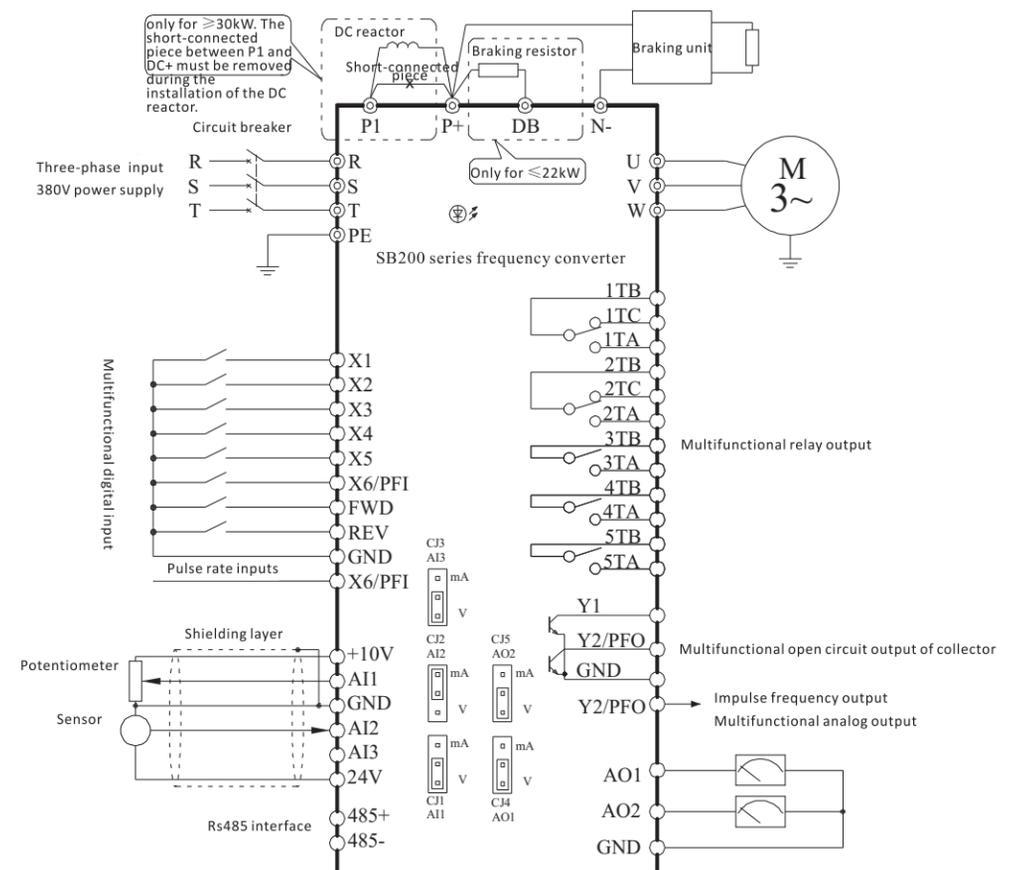
### Flexible frequency setting mode:

The main and auxiliary settings, and PID correction, etc. can be switched between different given frequency channels through digital input.



Frequency setting channel diagram

### Basic wiring diagram



## Common Technical Specification

	Items	Item Description
Input	Rated voltage, frequency	3phase 380V(-15%)~440V(+10%), 50/60Hz
	Allowable range	Voltage: 320~420V; voltage imbalance: <3%; frequency: 47~63Hz
Output	Output voltage	Three-phase, 0V~input voltage, deviation<5%
	Output frequency range	0.00 ~ 400.00 Hz
	Overload capacity	ND: 110% of rated current (IN) for 60s HD: 150% of rated current(IH) for 60s
	Frequency resolution	Digital setting: 0.01Hz; simulation setting: 0.1Hz (50Hz), remaining 0.1% maximum frequency
	Output frequency accuracy	Analog setting: ±0.2% maximum frequency (25±10°C) Digital setting: 0.01Hz (-10~+40°C)
	Run command channel	Operation panel setting, control terminal setting, communication setting, switchable via terminal
	Frequency setting channel	Operating panel, communication, UP/DOWN regulating valve, AI1, AI2, AI3, and PFI
	Auxiliary frequency setting	For flexible auxiliary frequency trim and setting frequency synthesis
	Torque boost	Automatic torque boost, manual torque boost
	V/F curve	Users can define V/F curve, linear V/F curve and 5 reduction torque characteristic curves
	Jog	Jog frequency range: 0.10~50.00Hz; jog acceleration & deceleration time: 0.1~60.0s
	Automatic energy-saving operation	Automatically optimize V/F curve according to load condition for automatic energy-saving operation
	Automatic voltage regulation (AVR)	When grid voltage changes within a certain range, automatically maintain a constant output voltage
	Automatic carrier regulation	Automatically regulate carrier frequency according to load characteristic and environment temperature
	Random PWM	Reduce output harmonic interference
	Instantaneous stop processing	When powering down instantaneously, the equipment can continue operating via busbar voltage control
	DC braking capacity	Braking time: 0.0-60.0S, braking current: 0.0~100.0% of rated current
	PFI	Maximum input frequency: 50kHz
	PFO	Output of 0~50kHz collector open ended pulse square signal is programmable.
	Analog input	Input of 3-path analog signals can select voltage mode or current mode frequency inverter via positive or negative input.
Analog output	2-path analog signal output can respectively select 0/4~20mA or 0/2~10V, programmable	
Digital input	8-circuit multifunctional digital input	
Digital output	2-circuit multifunctional collector open output, 5-circuit multifunctional relay output	
Communication	Built-in RS485 communication interface, supporting Modbus and USS protocols	
Features	Process PID	Two sets of PID parameters, various modification modes
	Water supply function	Multiple water supply modes: fire control, water injection control, clear water tank detection, wastewater detection and wastewater pump control, dormant operation, regular pump replacement, pump maintenance, and time interval setting pressure control, etc.
	User defined menus	Thirty user parameters can be defined
	Modification parameter display	Support the parameter display that is different from ex-factory value
	Timing watt hour meter function	Facilitate adjusting to the best energy conservation scheme
Protection	Protection	Over-current, over-voltage, under-voltage, input/output phase loss, output short circuit, overheat, motor overload, external failure, lost connection of analog input, and stall prevention, etc.
	Optional	Brake components, extension cable of operating panel, remote control box, digital I/O expansion board, relay expansion board, operating panel with parameter copy function (SB-PU70E), and
Environment	Application site	With elevation below 1,000m, indoor, without direction sunshine, dust, corrosive gas, combustible gas, oil mist, water vapor, water drop, and salt mist, etc.
	Operating ambient temperature/humidity	-10~+40 °C/<90% RH, without condensation of water droplets
	Storage temperature	-20~+60°C
	Vibration	<5.9m/s <sup>2</sup> (0.6g)
Structure	Degree of protection	IP20
	Cooling mode	Forced cooling, with control fan

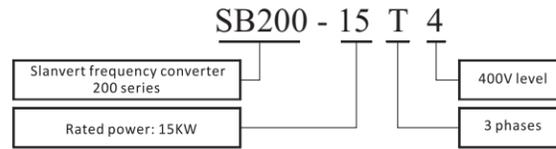
## Terminal Function

### Control panel terminal function

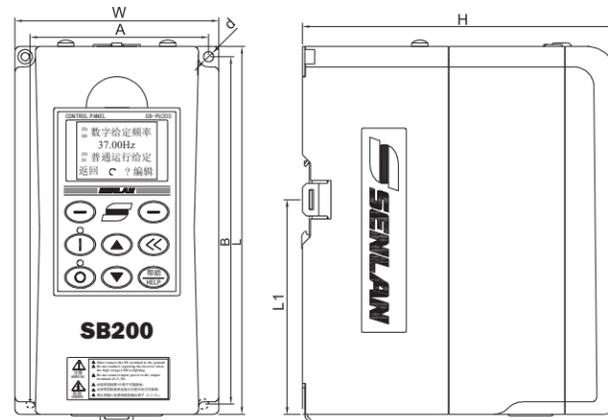
Terminal symbol	Terminal name	Terminal Function & Description	Technical Specifications		
485 +	Positive terminal of 485 differential signal	Rs485 communication interface	Can connect 1~32 RS485 sites Input impedance: >10kΩ		
485 -	Negative terminal of 485 differential signal				
GND	Ground	Grounding terminal for analog input/output, digital input/output, PFI, PFO, communication, +10V, 24V power supply			
+ 10V	+10V reference power supply	+10V power supply to the user	Maximum output current of +10V: 50mA, voltage accuracy better than 2%		
Y2/PFO	Impulse frequency output (when the terminal is used for PFO)	See description on parameters F6-38 for output function selection.	0 to 50 kHz, open collector output Specification: 24V/50mA		
X6/PFI	Pulse rate inputs (when the terminal is used for PFI)	See description on parameter F6-35~37 for setting.	0~50 kHz, input impedance: 1.5kΩ High level: >6V Low level: <3V 30V Maximum input voltage: 30V		
AO1	Multifunctional analog output 1	Function selection: see description on parameters F6-27 and F6-31 for details. Select voltage or current output form via jumper CJ4 and CJ5.	Current type: 0~20mA, load<5000 Voltage type: 0~10V, output: 10mA.		
AO2	Multifunctional analog output 2				
24V	24V power terminal	Provide users with 24V voltage	Maximum output current 80mA		
AI1	Analog input 1	Function selection: see description on parameters F6-00~26 for details. Select voltage or current output form via jumper CJ1, CJ2 and CJ3	Input voltage range: -10 ~ +10V Input current range: -20 ~ +20mA Input impedance: voltage input: 110kΩ Current input: 250Ω		
AI2	Analog input 2				
AI3	Analog input 3				
X1	X1 digital input terminal	See F4 menus for function selection and settings.	Input impedance: >3k Ω Input voltage range: <30V Sampling cycle: 1ms Dithering elimination time: 10ms High electrical level: >10V; low electrical level: <4V, equivalent to high electrical level when not connected		
X2	X2 digital input terminal				
X3	X3 digital input terminal				
X4	X4 digital input terminal				
X5	X5 digital input terminal				
X6/PFI	X6 digital input terminal (When this terminal is used for X6)				
REV	REV digital input terminal				
FWD	FWD digital input terminal				
Y1	Y1 digital output terminal			See F5 menus for function selection and configurations.	Open circuit output of collector Specification: 24VDC/50mA Output operation frequency: <500Hz
Y2/PFO	Y2 digital output terminal (when the terminal is used for Y2)				
1TA	Output terminal of relay 1	See F5 menus for function selection and configurations.	TA-TB: normally open TB-TC: normally closed Contact specification: 250VAC/3A 24VDC/5A		
ITB					
ITC					
2TA					
2TB					
2TC	Output terminal of relay 2				
3TA	Output terminal of relay 3				
3TB					
4TA	Output terminal of relay 4				
4TB					
5TA	Output terminal of relay 5				
5TB					

## Selection Guide

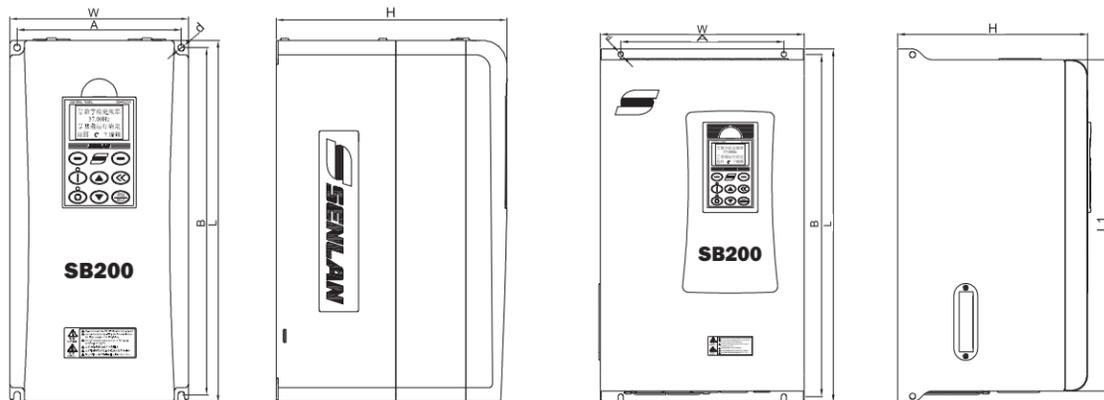
### Model description



### Overall Dimensions



Outline Drawing of SB200-1.5T4~5.5T4 Equipment  
(Can be installed with standard DIN rails)



Outline Drawing of SB200-7.5T4~22T4 Equipment

Outline Drawing of SB200-30T4 Equipment or Above

## Specification and Model

Inverter model	Rated capacity (kVA)	General application (110% IND minutes every 10 minutes)		Heavy load application (150% IHD minutes every 10 minutes)	
		Rated output Current (A)	Adaptive Motor (kW)	Rated output Current (A)	Adaptive Motor (kW)
SB200-1.5T4	2.4	3.7	1.5	3	1.1
SB200-2.2T4	3.6	5.5	2.2	3.7	1.5
SB200-4T4	6.4	9.7	4	5.5	2.2
SB200-5.5T4	8.5	13	5.5	9.7	4
SB200-7.5T4	12	18	7.5	13	5.5
SB200-11T4	16	24	11	18	7.5
SB200-15T4	20	30	15	24	11
SB200-18.5T4	25	38	18.5	30	15
SB200-22T4	30	45	22	38	18.5
SB200-30T4	40	60	30	45	22
SB200-37T4	49	75	37	60	30
SB200-45T4	60	91	45	75	37
SB200-55T4	74	112	55	91	45
SB200-75T4	99	150	75	112	55
SB200-90T4	116	176	90	150	75
SB200-110T4	138	210	110	176	90
SB200-132T4	167	253	132	210	110
SB200-160T4	200	304	160	253	132
SB200-200T4	248	377	200	304	160
SB200-220T4	273	415	220	377	200
SB200-250T4	310	475	250	415	220
SB200-280T4	342	520	280	475	250
SB200-315T4	389	590	315	520	280
SB200-375T4	460	705	375	590	315
SB200-400T4	490	760	400	705	375

### Overall Dimensions

Inverter model	W (mm)	L (mm)	L1 (mm)	H (mm)	A (mm)	B (mm)	D (mm)	Gross weight (kg)
SB200-1.5T4	100	180	105	157	87.5	170	Φ4.5	2
SB200-2.2T4								
SB200-4T4								
SB200-5.5T4	135	240	140	170	125	230	Φ4.5	3
SB200-7.5T4								
SB200-11T4								
SB200-15T4	150	300	-	195	138	288	Φ5.5	7
SB200-18.5T4								
SB200-22T4								
SB200-30T4	200	380	-	225	185	367	Φ7	10
SB200-37T4								
SB200-45T4								
SB200-55T4	275	470	440	256	200	455	Φ8	39
SB200-75T4								
SB200-90T4								
SB200-110T4	280	570	520	290	200	550	Φ10	51
SB200-132T4								
SB200-160T4								
SB200-200T4	310	680	630	330	220	660	Φ10	70
SB200-220T4								
SB200-250T4								
SB200-280T4	350	800	750	330	220	780	Φ12	97
SB200-315T4								
SB200-375T4								
SB200-400T4	410	940	884	318	300	920	Φ12	140
SB200-110T4								
SB200-132T4								
SB200-160T4	500	1060	1000	355	320	1038	Φ12	195
SB200-200T4								
SB200-220T4								
SB200-250T4	650	1180	1110	360	540	1152	Φ13	195
SB200-280T4								
SB200-315T4								
SB200-375T4	650	1250	1180	360	540	1222	Φ13	
SB200-400T4								