

SHCKELE

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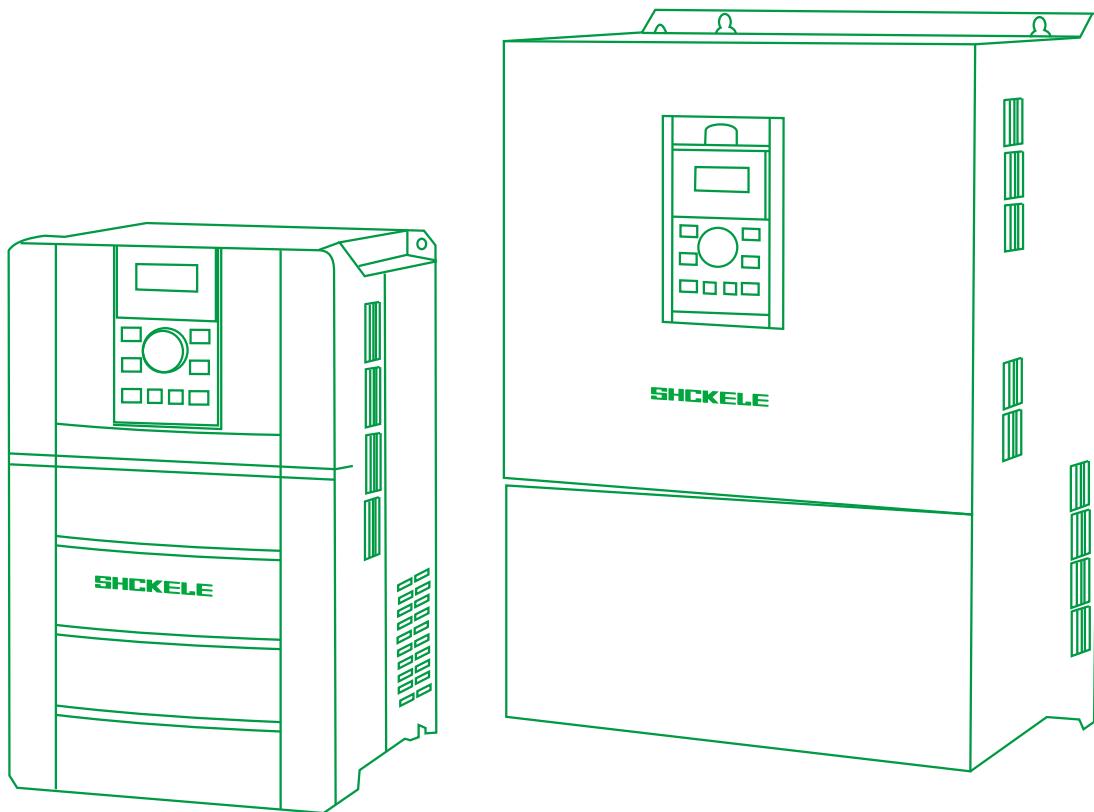
Be tolerant to diversity willing to innovation

---- Solutions provider in the field of motor drive control

Selection Guide

SCK-280

High Performance Vector Type Inverter



Product Performances

SCK280 Series





SCK280 Series High Performance Vector type inverter

- Synchronous and asynchronous motor supported
- Speed-sensor control and speed-sensorless control programmable
- Position control, speed control and torque control programmable



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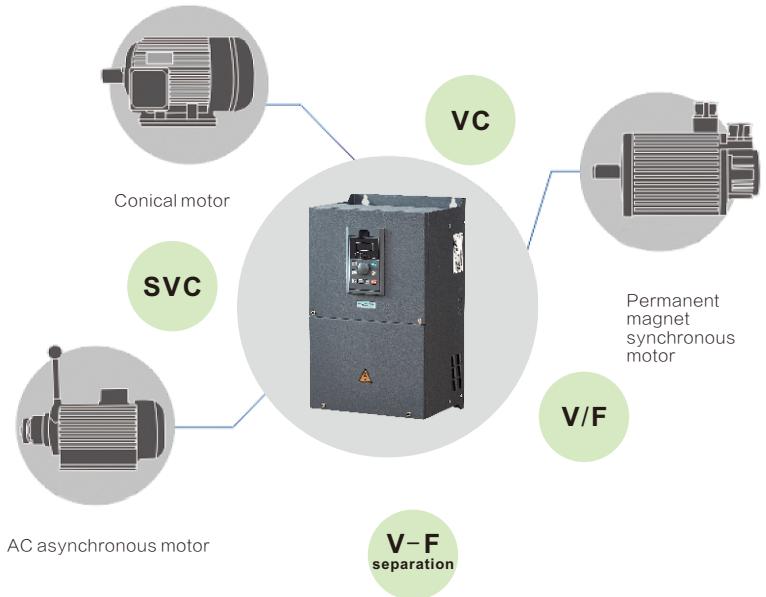
- Synchronous and asynchronous motor supported
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Product Performances

Product features

TI latest motor-control specific digital signal processors (DSP) with clock frequency reaching up to 150Hz are adopted.

Asynchronous motors and permanent magnet synchronous motors control are supported, with accurate autotuning. Two independent motor profiles are programmed, and the switch over of the two motors control can be realized by parameter setting or terminal input.

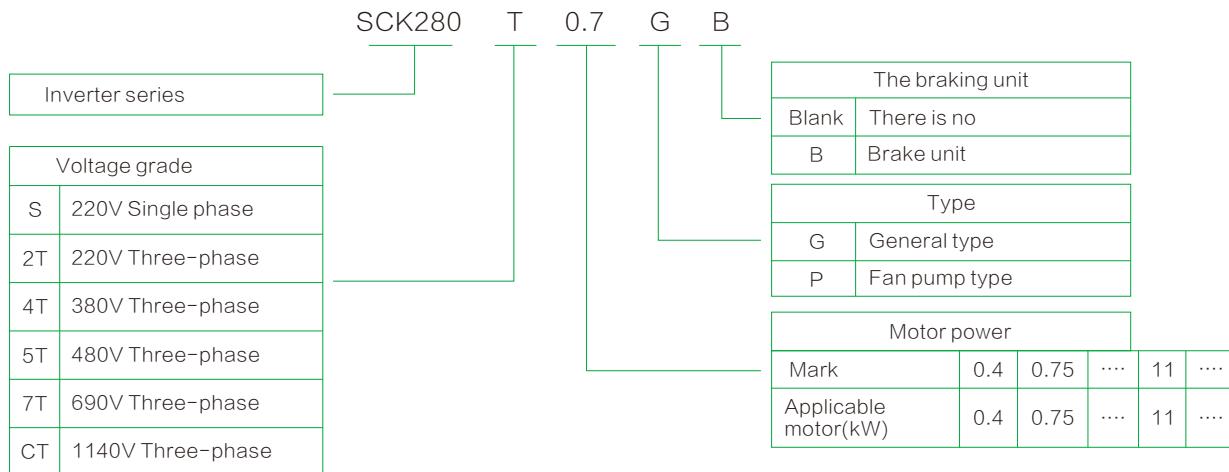


In V/F control mode ,accurate current limited control function makes sure of no over-current fault occurred no matter the drives are running at acceleration/deceleration, or motor locked status, well protecting the drives. Invertor control mode, a curate torque limited control pledges powerful or moderate torque complying with application requirements ,protecting machinery well

In V/F separated control mode,output frequency and output voltage can be set respectively fit for applications,such as variable frequency power sources , torque motors , etc.

Control mode	Starting torque	Speed range	Speed accuracy	Torque response
V/F control	0.5Hz 180%	1:100	± 0.5%	
Speed-sensorless control 1	0.5Hz 180%	1:100	± 0.2%	<10ms
Speed-sensorless control 2	0.25Hz 180%	1:200	± 0.2%	<10ms
Speed-sensor control	0Hz 200%	1:1000	± 0.02%	<5ms

Model explanation of SCK280



Model and technical parameters of SCK280

Three-phase power supply 1140V 50/60Hz				
Model	Power capacity	Input current	Output current	Applicable motor
SCK280-G 0K75/P 1K50	1.5	3.4	2.1	0.75kW/1.5kW
SCK280-G 1K50/P 2K20	3.0	5.0	3.8	1.5kW/2.2kW
SCK280-G 2K20/P 3K00	4.0	5.8	5.1	2.2kW/3.0kW
SCK280-G 4K00/P 5K50	5.9	10.5	9.0	4.0kW/5.5kW
SCK280-G 5K50/P 7K50	8.9	14.6	13.0	5.5kW/7.5kW
SCK280-G 7K50/P 11K0	11.0	20.5	17.0	7.5kW/11kw
SCK280-G 11K0/P 15K0	17.0	26.0	25.0	11kkW/15kW
SCK280-G 15K0/P 18K5	21.0	35.0	32.0	15kW/18.5kW
SCK280-G 18K5/P 22K0	24.0	38.5	37.0	18.5kW/22kW
SCK280-G 22K0/P 30K0	30.0	45.5	45.0	22kW/30kW
SCK280-G 30K0/P 37K0	40.0	62.0	60.0	30kW37kW
SCK280-G 37K0/P 45K0	57.0	76.0	75.0	37kW/45kW

Product Performances

Model and technical specification of SCK280

Power input

Rated input voltage	Rated input current	Frequency	Allowable voltage range
3-phase 380VAC/400VAC/415VAC 440VAC/460VAC/480VAC	See the table "Model and technical parameters of SCK280 series"	50HZ/60Hz,tolerance ± 5%	Voltage consecutive fluctuation ± 10%,short fluctuation -15%~10 % ie.323V~ 528V Voltage out-of-balance rate:<3%,The meets the standards of IEC61800-2

Power output

Applicable motor	Rated current	Output voltage	Output frequency	Over load capability
See the table "Model and technical parameters of SCK280 series"	See the table "Model and technical parameters of SCK280 series"	3-phase; 0 ~ rated input voltage, error less than ± 3%	0.00HZ~ 600Hz Resolution 0.01HZ	150% 1min; 180% 10s; 200% 0.5s, once per 10min.

Control characteristics

Contol pattern	V/F control	Speed-sensor less control 1	Speed-sensor less control 2	Speed-sensor control position control
Starting torque	0.5Hz 180%	0.5Hz 180%	0.25H 180%	0Hz 200%
Speed range	1:100	1:100	1:200	1:100
Speed accuracy	± 0.5%	± 0.2%	± 0.2%	± 0.02 %
Speed ripple	—	± 0.3%	± 0.3%	± 0.1%
Torque control	NO	NO	Yes	yes
Torque accuracy	—	—	± 7.5%	± 5%
Torque response	—	<10ms	<10ms	<.5ms
Positioning accuracy	—	—	—	± 1 pulse

Basic functions

Start frequency	0.00Hz~600.00Hz
Accel/Decel time	0.00s~60000s
Carrier frequency	0.5KHz~ 16KHz
Frequency command modes	Digital setting +Keypad Up/Down; Digital setting+terminal Up/Down.Communication setting. Analog setting: AI1/AI2/AB.Terminol pulse setting.
Start methods	Start from starting frequency. DC injection braking at start; Flying start.
Stop methods	Ramp to stop. Coast to stop. DC injection braking at ramp stop.
Dynamic brake capability	Braking unit triggered voltage:650 ~ 750V. Service time:0.0~100.0s. Brake units of SCK280~4T75 and below are optionally inbuilt.
DC braking capability	DC braking start frequency: 0.00~600.00Hz. DC braking current: constart torque 0.0~100%. DC braking time: 0.0~ 100s.
Input terminals	Seven digital input terminal, one of them can be used for pulse input. support dry contact active PIP and IPNI input ;Three analog input terminals, one of them is voltage only, and the other two are voltage(current programmable).
output terminals	One high-speed pulse output(0~50kHz square wave output and two analog outputs(voltage/current programmable)can output signals such as command frequency, output frequency, etc one digital output. One relay outputs.
Encode input terminal	Support 5V/12V voltage grade. Support OC,push-pull, differential signal inputs and such.

Environment

Field	Altitude	Temperature	Humidity	Vibration	Storage temperature
In the air, free from direct sunlight, dust, corrosive gas, oil mist, water vapor, dripping or salt, etc.	0m~2000m:de-rate 1%for every100m when above1000 meters.	-10C~+40C 40C ~ 50C rated output current de-rates1% for every 1C..	5%~95%, no condensation.	Lessthan 5.9m/s2(0.6g)	-40C~+70C

Others

Efficiency	Installation	Protection grade	Cooling method
Rated power,7.5kW and below power class :≥93%; 11KW~45kW Power grade :≥95%; 55kW with _ power class :≥98%;	Wall-mounted type(500kW and below)Cabinet type(560kW and 630kW)	IP20	Forced air cooling

Product Performances

Description of SCK280 control terminals function

Category	Analog input	
Terminal	Terminal designation	Specification
+10V	Analog input reference voltage	Voltage: $10.3V \pm 3\%$ Maximum output current: 25mA, and resistance of external potentiometer should be larger than 400Ω
GND	Analog ground	Isolated from COM interiorly
AI1	Analog input1	0mA~20mA: input impedance 500Ω , maximum input current 25mA. 0V~10V: input impedance $22k\Omega$, maximum input voltage 12.5V. 0~20mA/0~10V programmable by switch S2. Factory default: 0~10V
AI2	Analog input2	0mA~20mA: input impedance 500Ω , maximum input current 25mA. 0V~10V: input impedance $22k\Omega$, maximum input voltage 12.5V. switch S3 on control board for jumping between 0~20mA and 0~10V. Factory default: 0 ~ 10V. Realize motor thermal detection analog input by switch 54.

Category	Analog input	
Terminal	Terminal designation	Specification
	Analog input1	0mA~20mA; impedance $200\sim 500\Omega$, 0~10V; impedance $\geq 10k\Omega$. 0mA~20mA; input impedance 500Ω , maximum input current 25mA. Switch S5 on control board for jumping between 0~20mA and 0~10V. Factory default: 0~10V.
	Analog input2	0mA~20mA; impedance $200\sim 500\Omega$, 0~10V; impedance $\geq 10k\Omega$. 0mA~20mA; input impedance 500Ω , maximum input current 25mA. Switch S5 on control board for jumping between 0~20mA and 0~10V. Factory default 0~10V.
	Analog ground	isolated from COM interiorly

Description of SCK280 control terminals function

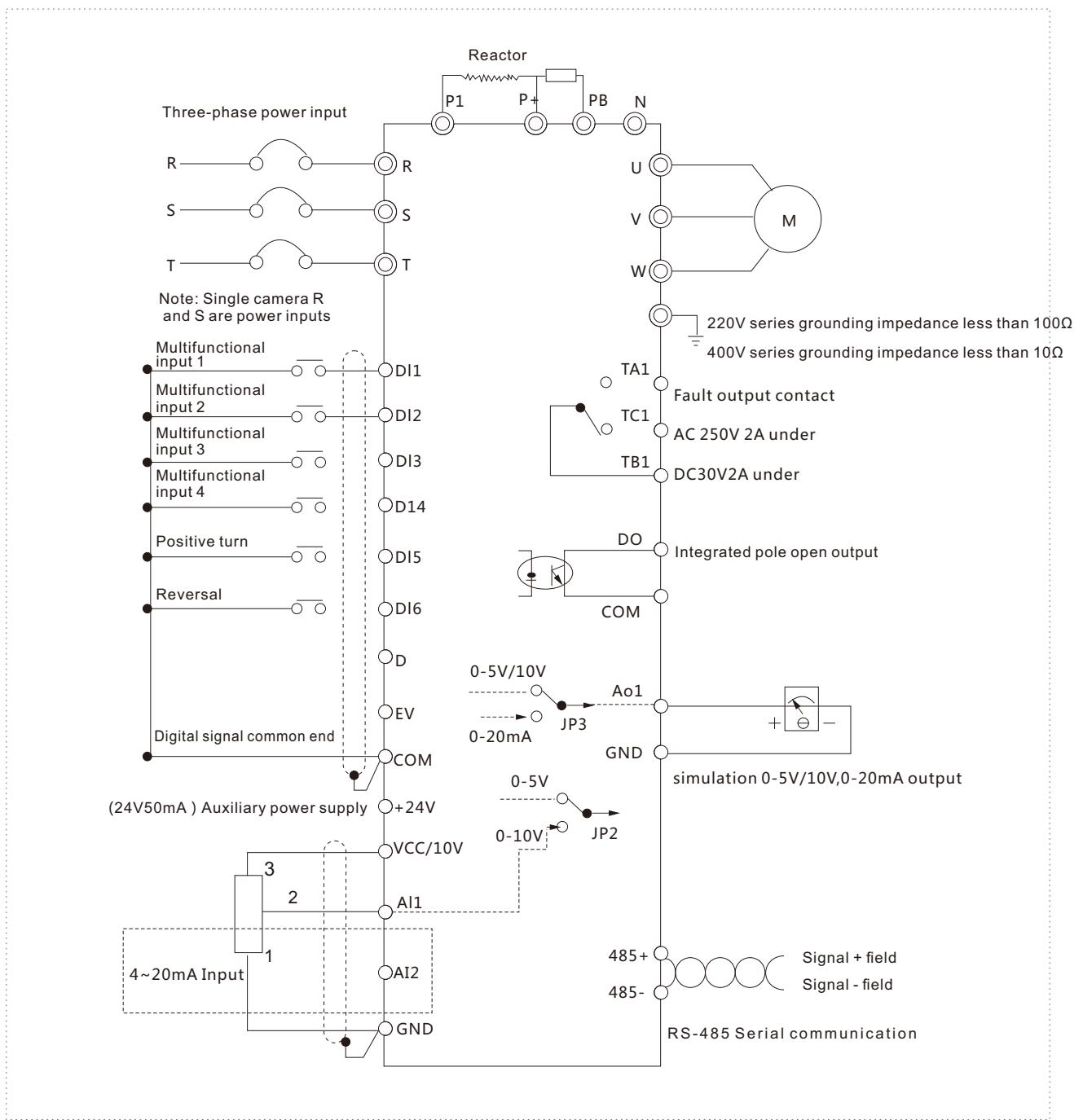
Category	Terminal	Terminal designation	Specification	
Digital output	Y1	open collector output	voltage range:0~24V	Current range:0~50mA
	Y2/DO	open collector out/Pulse out	Open collector output: same as Y1	Pulse output:0~50KHz
Relay output	TATB/TC	Relay output	TA-TB: NC; TA-TC: NO.	Contact capacity: 250VAC3A,30VDC3A.

Category	Analog input	
Terminal	Terminal designation	Specification
+24V	+24V	24V±10%, isolated from GNID interiorly Maximum load 200mA
OP	Digital input common terminal	Switch between high level and low level. Short-circuited with ± 24V at delivery, low value of digital input valid, external power input.
COM	+24V ground	Isolated from GNID interiorly
D11~DI6	Digital input terminals 1~5	Input: 24VDC, 5mA Frequency range: 0~200Hz Voltage range: 10~30V
DI7/DI	Digital input/Pulse input	Voltage range: 10~30V Digital input: same as DI1~DI6 Pulse input: 0.1~50kHz; voltage range: 10~30v

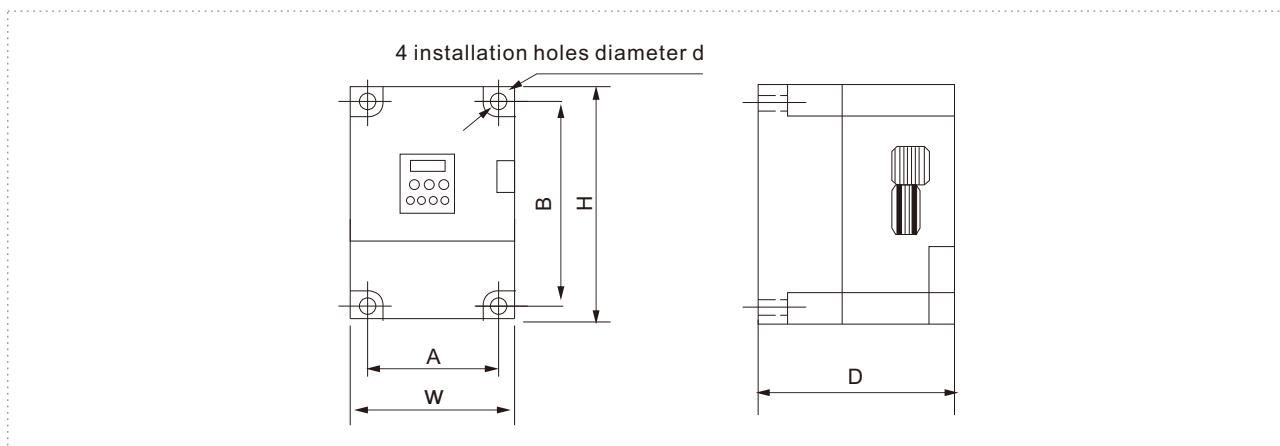
Category	Terminal 485 interface	Keypad 485 interface
Terminal	Terminal designation	Specification
485+	Differential signal 485+	Rate: 4800/9600/19200/38400/57600/115200bps Maximum distance: 500m(use standard network cable)
485-	Differential signal 485-	
GND	485 communication shielded ground	isolated from COM interiorly

Product Performances

SCK280 Wiring diagram of 380V single-phase inverter



Overall and installation dimension



Input power supply	Model	Dimension(mm)					Mounting aperture
		A	B	W	H	D	
Three-phase 380V	SCK280-G0K75/P 1K50	65	153	166	131	83	
	SCK280-G1K50/P 2K20	65	153	166	131	83	
	SCK280-G2K20/P 3K00	65	153	166	131	83	
	SCK280-G4K00/P5K50	80	233	245	173	120	
	SCK280-G5K50/P 7K50	80	233	245	173	120	
	SCK280-G7K50/P 11K0	80	233	245	173	120	
	SCK280-G11K0/P 15K0	125.5	267.5	281	185	145	
	SCK280-G15K0/P 18K5	187	305	320	205	203	
	SCK280-G18K5/P 22K0	187	305	320	205	203	
	SCK280-G22K0/P 30K0	187	305	320	205	203	
	SCK280-G30K0/P37K0	187	305	320	205	203	
	SCK280-G37K0/P 45K0	190	410	430	240	250	

Note: the above dimensions are subject to change without prior notice.