

SCHORCH-CH Series

High Voltage Frenquence Converters



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Schorch Electric Co.,Ltd. with the production base located in Suining City, Sichuan Province, fully adopts the advanced production technology and process of ATB Schorch GmbH to produce HV frequency conversion speed regulating devices of technologically advanced, stable and reliable. Our company is the production designated unit authorized by ATB Schorch GmbH in China, which mainly provides users with overall technical solutions for motor drive system, automatic control system and energy-saving technical renovation. The products mainly include high-tech power electronic equipment such as Schorch motors, medium and high voltage frequency converters of ultra-high power, DC transmission equipment, and special power supplies.

Schorch series motors and frequency conversion drive systems have been applied in many key projects in the word, and the technical level and stability have been in the international leading position. Based on the basic situation of the domestic market, our Company can adopt a variety of models to cooperate with customers, including equipment sale and purchase, contract energy management, and upgrading of existing equipment. Our Company adheres to the "Reputation First, Service First, Customer First" for the purpose of enterprise development, and provides more perfect energy-saving solutions for customers in different industries and regions, to help enterprises save energy, reduce costs and create wealth.

Some classical cases >>



A project with steel sintering main exhaust fan, coal injection, ore chute and other equipment (a total of 12 sets) in Guangdong has been successfully put into operation in December 2021.



A project of sintering main exhaust fan (four sets of 10kV, 4900kW, 2×260 m², process of double-converters and double-exhaust fans process) of an iron and steel company in Hebei was successfully put into operation on April 6th, 2017.



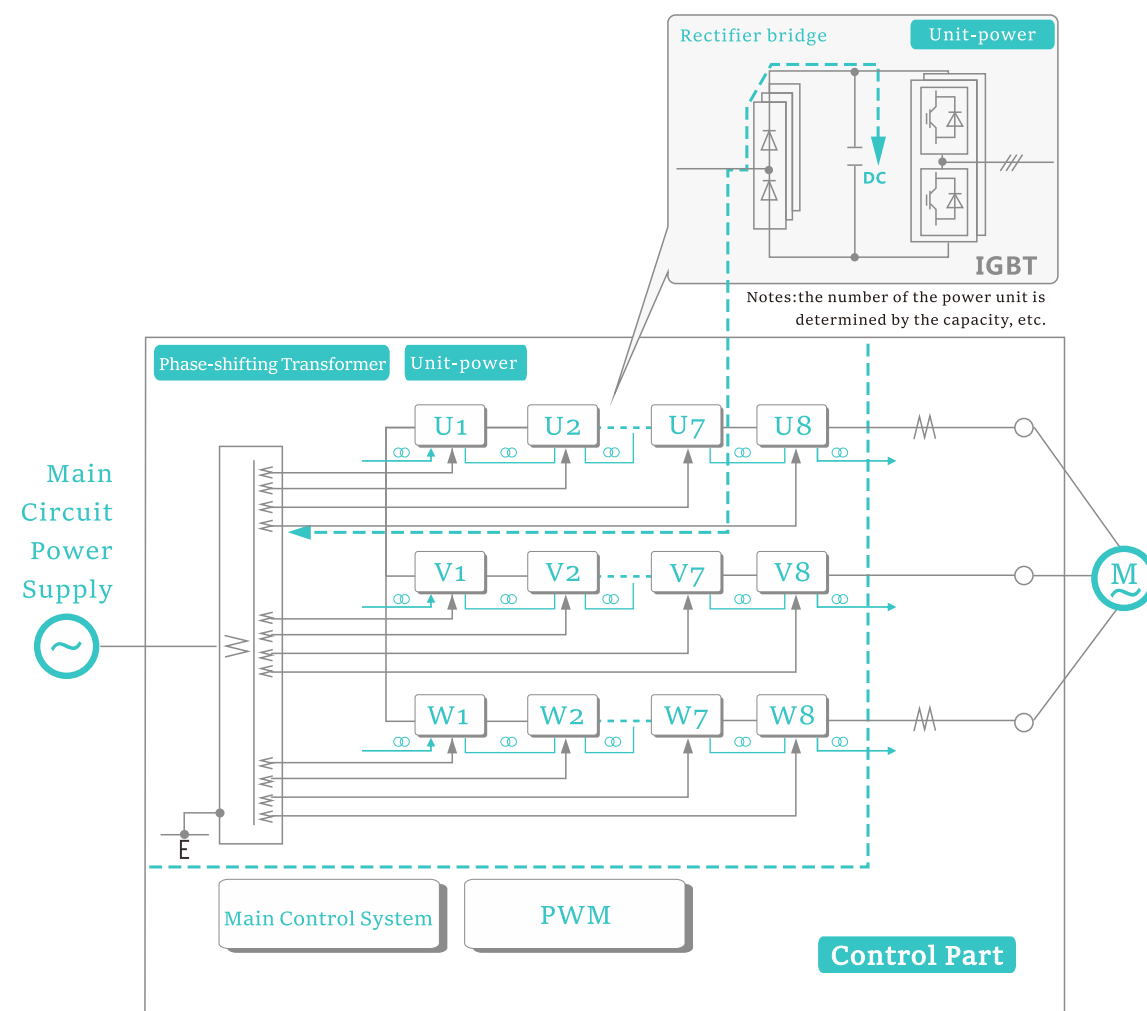
The 450m³ blast furnace blower motor (1 set of 10kV, 6800kW, 1 set of 10kV, 4000kW, frequency conversion system of 1 with 2) of Nuoya Seiko company in Guiyang Xiuwen was successfully put into operation on December 6, 2018.



Projects of Frequency Conversion Driving for 2×7700kW Desulfurization and Denitrification Booster Fan (Axial Flow Fan with Adjustable Blades) of Fujian Longking and Anhui Weida.

Topology and Structure >>

> Main Circuit Topology >>



Phase-shifting transformer

- Sealing structure
- Dry forced air cooling
- Phase-shifting transform



Control Machine

- Use the chip of TI-DSP
- Digital analog control
- Support a variety of communication methods



Unit Power

- One-sided maintenance
- Improved structure
- High density of power

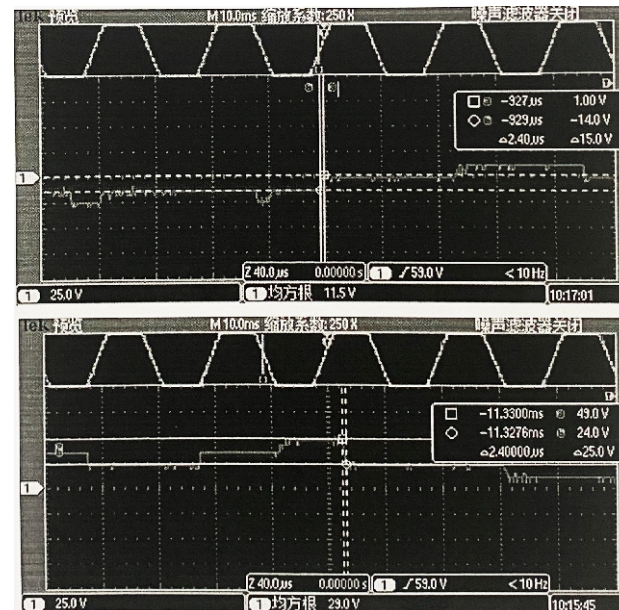


Technical advantages >>

> Torque ripple control is at the leading level in the industry

- The industry requires that the torque ripple (dv/dt) should not exceed 2%, and we can make it below 1%.

The test data comes from Tianjin Tianchuan Electric Control Equipment Test Co.,Ltd.



> Harmonic content less than 1.3%

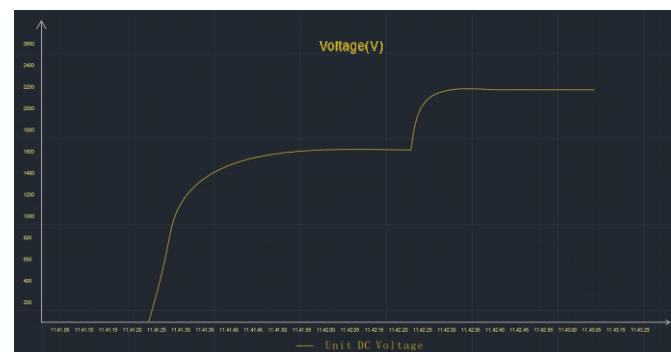
- The industry requires that the harmonic content should not exceed 4%, and we can make it below than 1.3%.
- Our product adopts SPWM pulse width modulation technology, which results in a significant reduction in harmonic content. So the equipment in the customer's factory is basically free from the interference of harmonic pollution.

控制装置特性检查 (输出电压相对谐波含量试验)		试品编号: 2021WG1136
试验依据: GB/T12668.4-2006 10.2.2.1、GB/T 3859.1-2013 7.3.6 7.5.2		试验日期: 2021年08月24日
试验设备名称/编号: 钳式功率计 (IC-N02)		
一、试验情况:		
试验对象: ☒ 整机 ☐ 样块/零部件 (描述具体名称:		

> Soft charging technology

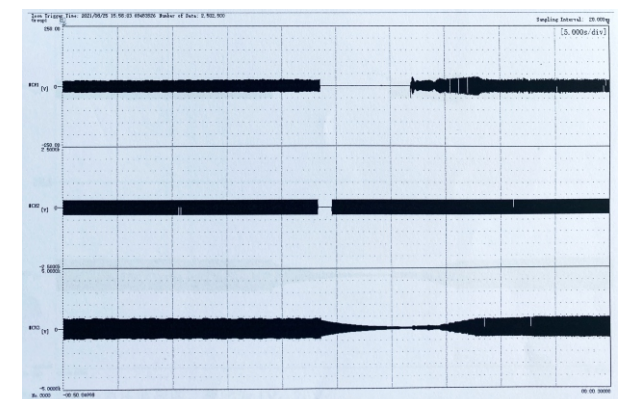
- The convert uses a unique soft charging technology to effectively eliminate excitation inrush current.
- The power unit is charged first when the system is energized with high voltage power.

It prolongs the service life and reliability of the capacitor.



> Low voltage ride through

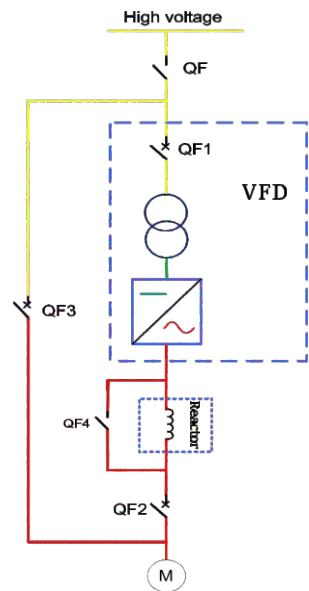
- So far, only two or three companies have conducted the low voltage ride-through tests. We are one of them.
- When the input voltage drops below 60% and recovers within 3 seconds, the convert can track the speed and restart normally.



Technical advantages >>

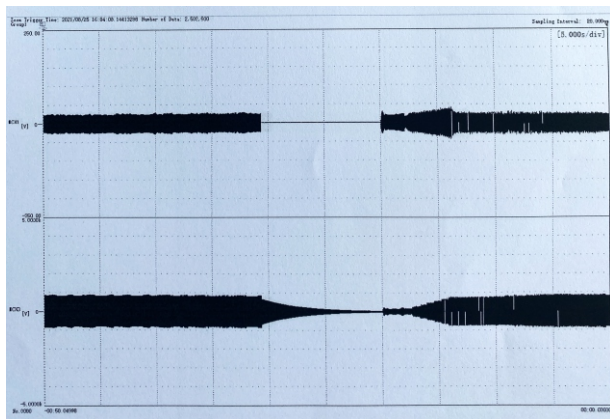
> Unit/system bypass combined with N+ power units

- The frequency converter can be configured with redundant power units, when one or more units fails, we can bypass the unit and keep the operation of motor.
- When the converter fails, we can bypass the converter and directly connect the motor to the original grid to keep the operation of motor.



> Tracking rotating speed when starting:

- As shown in the figure, when the frequency convert is turned off, the motor speed can be tracked when it is started again to complete a shock-free start.
- Our device can search the motor frequency from 50-0 Hz, which helps it to restart quickly.
- It can also judge whether the motor is running in reverse.



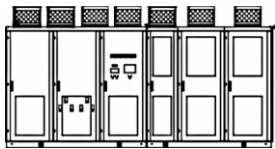
Main Technical Indexes >>

Items		Parameter Selection
Input	Input rated voltage	3 、 3.3 、 6 、 6.6 、 10KV(*)
	Voltage fluctuation range	Runs at full load with voltage fluctuation of ±10%
	Frequency variation range	50Hz±10%
	Input power factor	≥ 0.95 (over 20% load)
	Input current harmonics	≤ 5% meeting standards of IEEE519-1992 and GBT14549-93
Output	Output voltage range	3 、 3.3 、 6 、 6.6 、 10KV(*)
	Max. output capacity	30000KVA
	Output frequency range	0-50Hz(*)
Control mode	Main circuit mode	Directly connected in series with HV converter
	Control mode	Vector control with/without speed sensor, V/F control
	Output frequency accuracy	0.01Hz
	Acceleration and deceleration time	1-3000s(*)
	Overload capacity	125% 60s
	Current limiting protection	150%
	Converter efficiency	>97% (including input transformer)
	Main control functions	Patented function of power unit pre-charge, functions of efficient low-voltage speed regulation, flying start, restart after instantaneous stop, main circuit bypass, high and low voltage ride-through, abnormal detection of unit waveform and converter output waveform, and remote diagnosis.
	Protection functions	Overload, over current, abnormal output voltage (stop when deviation exceeds 30%), abnormal cooling fan, power failure detection, etc.
	Communication function	Hard wiring(standard) Profibus-DP(*) 、 Modbus(*) 、 Ethernet(*)
	Earthing resistance	≤ 4 Ω
	MTBF	80000h
Cabinet structure	Cabinet structure	Made of steel plate, self-supporting locking
	Cabinet protection level	Ip30(*)
	Seismic capacity (with base)	According to the 7-level shockproof design
	Cooling method	Forced air cooling
Environment	Cabinet color	Standard RAL7035 light grey (*)
	Temperature	Operating temperature: -5~40 ℃ , storage temperature: -20~60 ℃
	RH	RH: ≤ 95% (without condensation at 20 ℃)
	Altitude	≤ 1000m(*)
	Ground acceleration	0.1g(*)
	Setting place	Indoor, general environment without corrosive, flammable, explosive gas (*)

* means can be freely configured

Selection Table >>

SCHORCH 10kV
Specification Selection Table



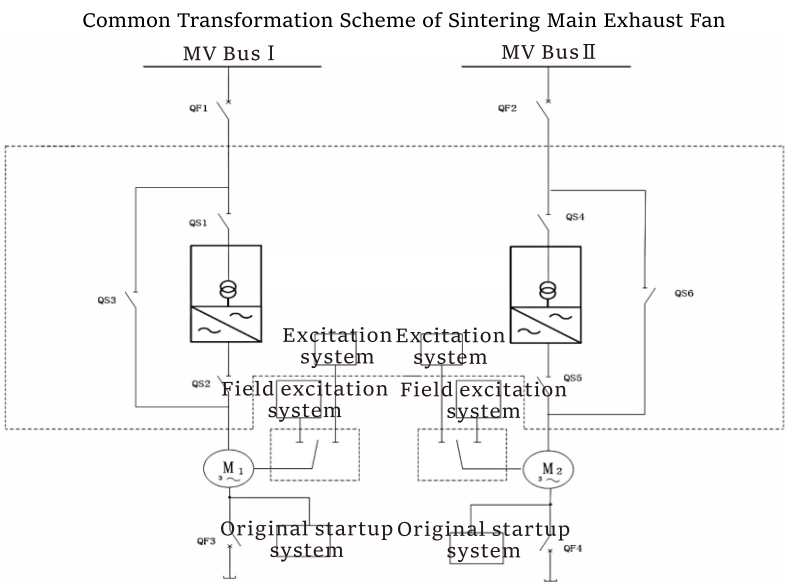
Product Name	Product Model	Adoptive Voltage	Adoptive Motor Power KW	Rated Current	Overall Dimension	Weight kg
MV VFD	SCHORCH-CH/15625-10/900-AOW	10KV	12500	900	18825*1700*3358	42160
MV VFD	SCHORCH-CH/15000-10/860-AOW	10KV	12000	860	18825*1700*3358	42160
MV VFD	SCHORCH-CH/14375-10/820-AOW	10KV	11500	820	18825*1700*3358	42160
MV VFD	SCHORCH-CH/13750-10/780-AOW	10KV	11000	780	18825*1700*3358	42160
MV VFD	SCHORCH-CH/13125-10/750-AOW	10KV	10500	750	18825*1700*3358	42160
MV VFD	SCHORCH-CH/12500-10/710-AOW	10KV	10000	710	18825*1700*3358	42160
MV VFD	SCHORCH-CH/11875-10/680-AOW	10KV	9500	680	18825*1700*3358	42160
MV VFD	SCHORCH-CH/11250-10/640-AOW	10KV	9000	640	16724*1700*3056	37350
MV VFD	SCHORCH-CH/10000-10/578-AOW	10KV	8000	578	11593*1700*3358	24950
MV VFD	SCHORCH-CH/10000-10/560-AOW	10KV	8000	560	11593*1700*3358	24950
MV VFD	SCHORCH-CH/9000-10/520-AOW	10KV	7100	520	11593*1700*3358	24950
MV VFD	SCHORCH-CH/9000-10/480-AOW	10KV	7100	480	10793*1700*3358	22600
MV VFD	SCHORCH-CH/7875-10/455-AOW	10KV	6300	455	9968*1700*3358	21600
MV VFD	SCHORCH-CH/7875-10/440-AOW	10KV	6300	440	9968*1700*3358	21600
MV VFD	SCHORCH-CH7500/-10/435-AOW	10KV	6000	435	9968*1700*3358	21600
MV VFD	SCHORCH-CH/7500-10/405-AOW	10KV	6000	405	8460*1700*3358	21375
MV VFD	SCHORCH-CH/7000-10/400-AOW	10KV	5600	400	7860*1700*3056	18775
MV VFD	SCHORCH-CH/6750-10/390-AOW	10KV	5400	390	7860*1700*3056	18775
MV VFD	SCHORCH-CH/6750-10/365-AOW	10KV	5400	365	7860*1700*3056	18775
MV VFD	SCHORCH-CH/6250-10/360-AOW	10KV	5000	360	7860*1700*3056	18775
MV VFD	SCHORCH-CH/6000-10/350-AOW	10KV	4800	350	7860*1700*3056	18775
MV VFD	SCHORCH-CH/5625-10/320-AOW	10KV	4500	320	7860*1700*3056	18775
MV VFD	SCHORCH-CH/5500-10/315-AOW	10KV	4400	315	7860*1700*3056	18775
MV VFD	SCHORCH-CH/5250-10/305-AOW	10KV	4200	305	7860*1700*3056	18775
MV VFD	SCHORCH-CH/5000-10/280-AOW	10KV	4000	280	6557*1800*3052	12519
MV VFD	SCHORCH-CH/4750-10/275-AOW	10KV	3800	275	6557*1800*3052	12519
MV VFD	SCHORCH-CH/4750-10/255-AOW	10KV	3800	255	6557*1800*3052	12519
MV VFD	SCHORCH-CH/4440-10/250-AOW	10KV	3550	250	6557*1800*3052	12519
MV VFD	SCHORCH-CH/3940-10/230-AOW	10KV	3150	230	6557*1800*3052	12519
MV VFD	SCHORCH-CH/3750-10/218-AOW	10KV	3000	218	6557*1800*3052	12519
MV VFD	SCHORCH-CH/3750-10/205-AOW	10KV	3000	205	6257*1700*2722	10400
MV VFD	SCHORCH-CH/3500-10/200-AOW	10KV	2800	200	6257*1700*2722	10400
MV VFD	SCHORCH-CH/3125-10/180-AOW	10KV	2500	180	6257*1700*2722	10400
MV VFD	SCHORCH-CH/3000-10/175-AOW	10KV	2400	175	6257*1700*2722	10400
MV VFD	SCHORCH-CH/2800-10/165-AOW	10KV	2240	165	6257*1700*2722	10400
MV VFD	SCHORCH-CH/2750-10/160-AOW	10KV	2200	160	5152*1700*2722	9080
MV VFD	SCHORCH-CH/2800-10/155-AOW	10KV	2240	155	4554*1700*2722	8000
MV VFD	SCHORCH-CH/2750-10/152-AOW	10KV	2200	152	4554*1700*2722	8000

Remarks:

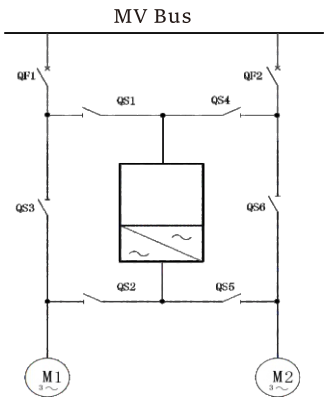
- 1.Please contact and consult our commercial staff for the selection of converters with other input and output voltage.
- 2.Please consult our technical staff for the selection of larger capacity.
- 3.Only domestic models are marked in the models. For imported models, please contact our commercial staff.

Product Name	Product Model	Adoptive Voltage	Adoptive Motor Power KW	Rated Current	Overall Dimension	Weight kg
MV VFD	SCHORCH-CH/2650-10/150-AOW	10KV	2100	150	4554*1700*2722	7000
MV VFD	SCHORCH-CH/2500-10/145-AOW	10KV	2000	145	2950*1700*2750	5500
MV VFD	SCHORCH-CH/2250-10/130-AOW	10KV	1800	130	2950*1700*2750	5500
MV VFD	SCHORCH-CH/2000-10/115-AOW	10KV	1600	115	2950*1700*2750	5500
MV VFD	SCHORCH-CH/1850-10/106-AOW	10KV	1480	106	2950*1700*2750	5500
MV VFD	SCHORCH-CH/1750-10/103-AOW	10KV	1400	103	2950*1700*2750	5000
MV VFD	SCHORCH-CH/1750-10/98-AOW	10KV	1400	98	2400*1500*2442	5000
MV VFD	SCHORCH-CH/1600-10/93-AOW	10KV	1280	93	2400*1500*2442	4500
MV VFD	SCHORCH-CH/1565-10/91-AOW	10KV	1250	91	2400*1500*2442	4500
MV VFD	SCHORCH-CH/1400-10/82-AOW	10KV	1120	82	2400*1500*2442	4500
MV VFD	SCHORCH-CH/1250-10/73-AOW	10KV	1000	73	2400*1500*2442	4000
MV VFD	SCHORCH-CH/1190-10/70-AOW	10KV	950	70	2100*1500*2442	4000
MV VFD	SCHORCH-CH/1125-10/66-AOW	10KV	900	66	2100*1500*2442	4000
MV VFD	SCHORCH-CH/1065-10/62-AOW	10KV	850	62	2100*1500*2442	4000
MV VFD	SCHORCH-CH/1000-10/58-AOW	10KV	800	58	2100*1500*2442	4000
MV VFD	SCHORCH-CH/940-10/56-AOW	10KV	750	56	2100*1500*2442	4000
MV VFD	SCHORCH-CH/890-10/53-AOW	10KV	710	53	2100*1500*2442	4000
MV VFD	SCHORCH-CH/840-10/49-AOW	10KV	670	49	2100*1500*2442	4000
MV VFD	SCHORCH-CH/790-10/47-AOW	10KV	630	47	2100*1500*2442	4000
MV VFD	SCHORCH-CH/750-10/45-AOW	10KV	600	45	2100*1500*2442	4000
MV VFD	SCHORCH-CH/700-10/42-AOW	10KV	560	42	2100*1500*2442	4000
MV VFD	SCHORCH-CH/665-10/40-AOW	10KV	530	40	2100*1500*2442	4000
MV VFD	SCHORCH-CH/625-10/38-AOW	10KV	500	38	2100*1500*2442	4000
MV VFD	SCHORCH-CH/595-10/36-AOW	10KV	475	36	2100*1500*2442	4000
MV VFD	SCHORCH-CH/565-10/34-AOW	10KV	450	34	2100*1500*2442	4000
MV VFD	SCHORCH-CH/535-10/32-AOW	10KV	425	32	2100*1500*2442	4000
MV VFD	SCHORCH-CH/500-10/29-AOW	10KV	400	29	1800*1500*2390	3500
MV VFD	SCHORCH-CH/470-10/28-AOW	10KV	375	28	1800*1500*2390	3500
MV VFD	SCHORCH-CH/445-10/27-AOW	10KV	355	27	1800*1500*2390	3500
MV VFD	SCHORCH-CH/420-10/25-AOW	10KV	335	25	1800*1500*2390	3500
MV VFD	SCHORCH-CH/395-10/24-AOW	10KV	315	24	1800*1500*2390	3500
MV VFD	SCHORCH-CH/375-10/23-AOW	10KV	300	23	1800*1500*2390	3500
MV VFD	SCHORCH-CH/350-10/21-AOW	10KV	280	21	1800*1500*2390	3500
MV VFD	SCHORCH-CH/315-10/19-AOW	10KV	250	19	1800*1500*2390	3500
MV VFD	SCHORCH-CH/275-10/17-AOW	10KV	220	17	1800*1500*2390	3500
MV VFD	SCHORCH-CH/250-10/15-AOW	10KV	200	15	1800*1500*2390	3500

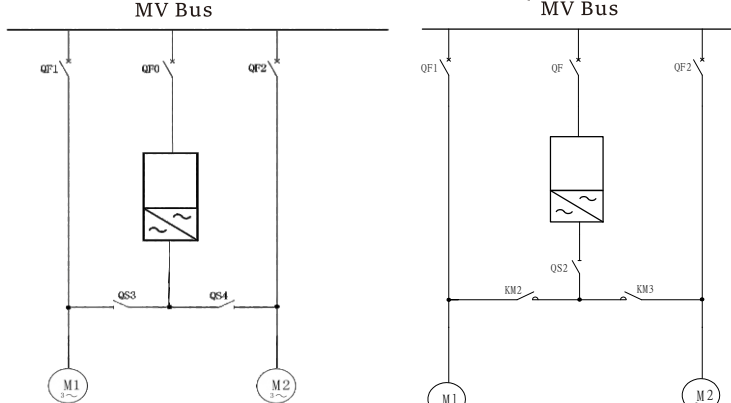
System Scheme >>



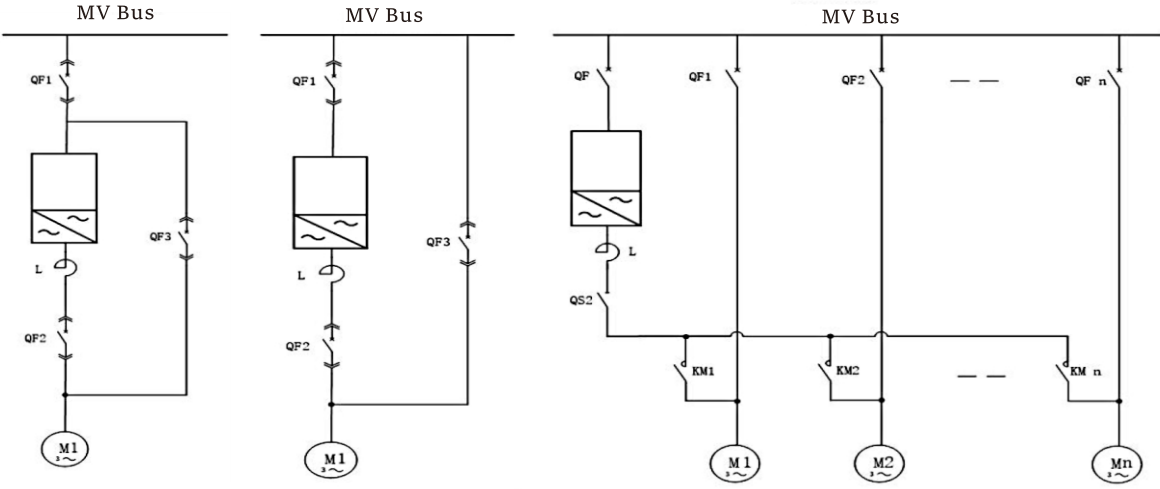
Scheme 1 of one for two



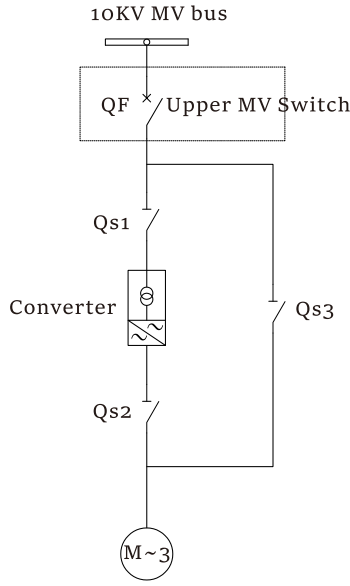
Scheme 2 of one for two



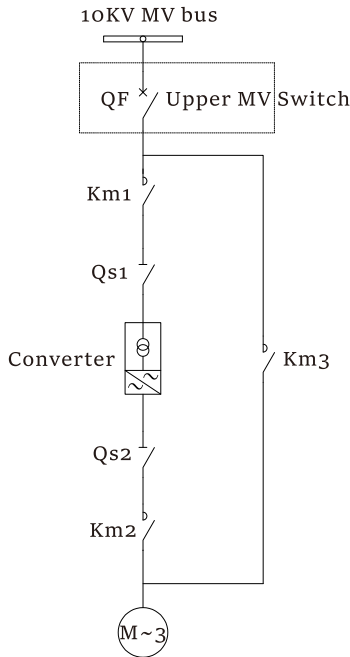
Common grid-connected schemes for converter starting



Scheme of one for one + manual bypass

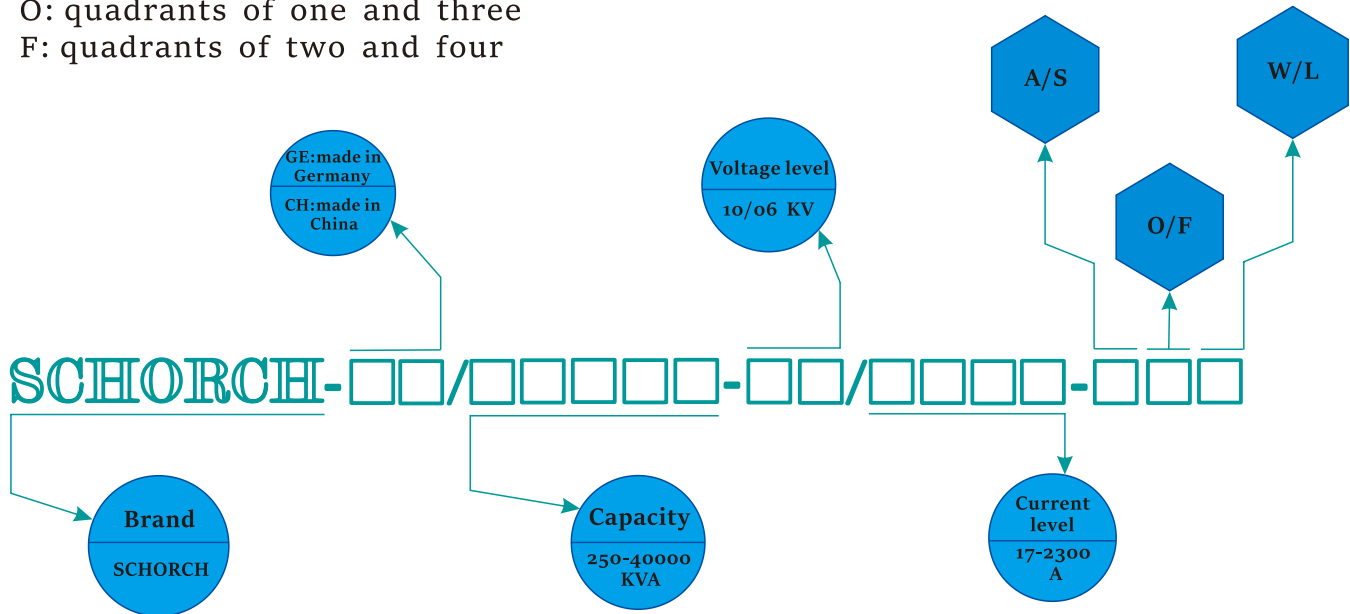


Scheme of one for one + automatic bypass



Description of SCHORCH Product Selection >>

- A: asynchronous motor
- S: synchronous motor
- W: wind cooling
- L: liquid cooling
- O: quadrants of one and three
- F: quadrants of two and four



Application Field >>



Cement Manufacturing
Kiln induced draft fan,
Preheating tower fan,
Cooler exhaust Fan, Pressure blower,
Raw Meam grinding induced draft fan,
Classifier fan, Main dust suction fan,
Cooler dust suction induced fan, etc.



Thermal Power Generation
Feed water pump, Dust suction fan,
Centrifugal induced draft fan,
Mortar machine, Blower,
Circulating water pump,
Axial-flow induced draft fan with
adjustable static blades,
Compressor, etc.

Mining and Metallurgy
Sintering main exhaust fan,
Mud pump,Hhigh pressure blower,
Cooling water pump, Descaling pump,
Centrifugal feed pump,
Blast furnace fan, Compressor, etc.



Petroleum and Chemical Industry
Main pipeline pump,
Water injection pump,
Mixer, Gas compressor,
Extrude, Brine Pump,
Submersible oil pump,
Boiler feed pump, etc.



Water Supply and Sewage Treatment
Sewage pump,
Purification pump,
Fresh water Pump,
Biological rough treatment tower
pump, etc.



Others
Transmission machinery,
Wind turbines,
Wind tunnels, etc.

