

Typical Applications

- Power Factor Compensation
- Voltage Unbalance
- Voltage Support
- Flicker Mitigation
- Selective Harmonic mitigation

Typical Markets

Metals&Mining, Oil & Gas,
Utility&Grid, General Industry,
Renewable, Transportation



Transformer-less Voltage Source Converter

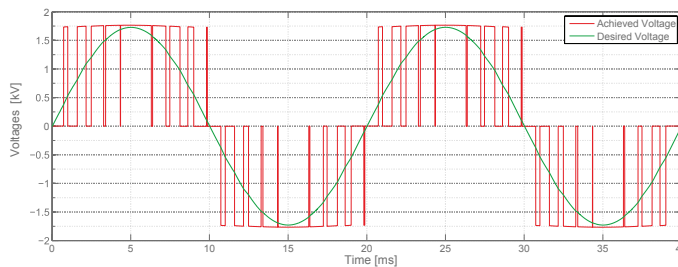
Medium-Voltage

Nidec has more than forty years experience in designing and manufacturing inverters and power quality solutions. The new SVRH series high efficiency, direct-to-line connection (transformer-less), Multilevel Voltage Source Converter (VSC or STATCOM) has very low grid harmonics compared with other VSC topologies. The NIDEC VSC is based on cascaded H-Bridge, compact power module, and unique converter frame design for both board and container solutions.

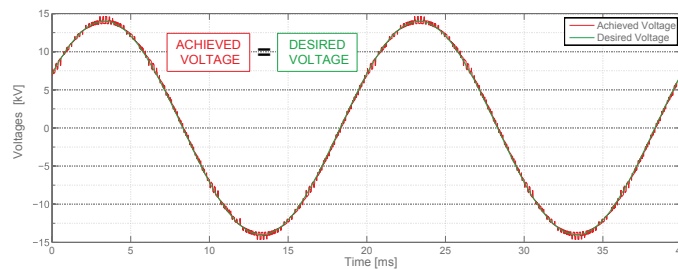
Key benefits of multilevel cascaded H-bridge converter

- Modular design
- Low input harmonics content
- Sinusoidal waveform
- Low losses, high efficiency
- Easy maintenance, high reliability
- Well-proven IGBT technology
- Excellent availability: 99.5%
- Small footprint

INDIVIDUAL H-BRIDGE VOLTAGES TRENDS



PHASE-TO-PHASE VOLTAGES TRENDS



Available versions

- Cabinet arrangement or container arrangement
- Delta or Star configuration
- Transformer or transformer-less for the most cost effective solution
- Option for Class 4C environmental classification
- Air cooled also available

Technical Data

	DESCRIPTION	UNIT	CHARACTERISTIC
ENVIRONMENTAL CONDITIONS	Installation		indoor
	Working temperature	°C	+ 5 +40 ⁽¹⁾
	Storage temperature	°C	-20 +70
	Relative humidity (max.)	%	< 85 non condensing
	Altitude (max.)	m ft	< 1000 a.s.l. ⁽²⁾ < 3300 a.s.l. ⁽²⁾
	Pollution degree		2 (Without conductive pollution in accordance with IEC 61800-5-1)
CONVERTER	Type		Medium Voltage Multi-level IGBT Inverter
	Rated output voltage	kV	6.6; 10; 11
	Output frequency	Hz	50 / 60
	Rated output current	A	See tables below
	Cooling type		AF – Forced air. WF – Deionized water in closed circuit with water /water heat exchanger or with outside water/air heat exchanger. Redundant pumps
CABINET⁽³⁾	Protection degree / open door		IP 42 / IP20
	Paint color		RAL 7035 (Nidec ASI standard)
	Cable inlet / outlet		Bottom / bottom
	Noise level @ 1 m	dB(A)	Air cooling: ≤ 80 - Water cooling: ≤ 70
	Accessibility		Front

(1) For ambient temperature above 50°C , please contact the factory or the local representative - (2) For altitudes above 2000 m (6600 ft), please contact the factory or the local representative
 (3) For information about container version (only water cooled), please contact the factory or the local representative

SILCOVAR-H – Water cooling– Star configuration

SIZE	RATED CURRENT [A]	RATED POWER [kVAR]	DIMENSIONS (cabinet)			
			Width [mm]	Depth [mm]	Height [mm]	
6000 V	SVRH 5K8 W60	560	5820	7200	1600	2600
	SVRH 7K3 W60	700	7274	7200	1600	2600
	SVRH 8K7 W60	840	8729	7800	1600	2600
	SVRH 10K9 W60	1050	10912	7800	1600	2600
	SVRH 13K1 W60	1260	13095	7800	1600	2600
6600 V	SVRH 6K4 W66	560	6402	7800	1600	2600
	SVRH 8K0 W66	700	8002	7800	1600	2600
	SVRH 9K6 W66	840	9602	8600	1600	2600
	SVRH 12K0 W66	1050	12003	8600	1600	2600
	SVRH 14K4 W66	1260	14404	8600	1600	2600
10000 V	SVRH 9K7 W10	560	9699	8550	1600	2600
	SVRH 12K1 W10	700	12124	8550	1600	2600
	SVRH 14K5 W10	840	14549	9550	1600	2600
	SVRH 18K2 W10	1050	18187	9550	1600	2600
	SVRH 21K8 W10	1260	21824	9550	1600	2600
13800 V	SVRH 13K4 W13	560	13385	9900	1600	2600
	SVRH 16K7 W13	700	16732	9900	1600	2600
	SVRH 20K1 W13	840	20078	11300	1600	2600
	SVRH 25K1 W13	1050	25097	11300	1600	2600
	SVRH 30K1 W13	1260	30117	11300	1600	2600

From 13800 V to 35000 V Contact Nidec Industrial Solutions

SILCOVAR-H – Water cooling – Delta configuration

SIZE	RATED CURRENT ⁽¹⁾ [A]	RATED POWER ⁽²⁾ [kVAR]	DIMENSIONS (cabinet)			
			Width [mm]	Depth [mm]	Height [mm]	
6600 V	SVRH 11K1 W66	560	11088	9900	1600	2600
	SVRH 13K9 W66	700	13860	9900	1600	2600
	SVRH 16K6 W66	840	16632	11300	1600	2600
	SVRH 20K8 W66	1050	20790	11300	1600	2600
	SVRH 24K9 W66	1260	24948	11300	1600	2600

From 6600 V to 35000 V Contact Nidec Industrial Solutions

(1) The rated power is calculated with the formula $QN = 3 \cdot 6600 \cdot IN$ - (2) Heat exchanger pressure drop: 0.5 Bar. Maximum pressure: 5 Bar

CASCADED H-BRIDGE
 CONVERTER DELTA
 CONFIGURATION

