

SVFH series

Active Front End Transformer-less Inverter
3.3 kV – 6.6 kV up to 2.5 MW



All for dreams

Typical Applications

- Pumps, fans, blowers, small compressors
- Soft – starting of multiple motors (on request)

Typical Market

Energy, Oil & Gas, Marine, Water and Test facilities

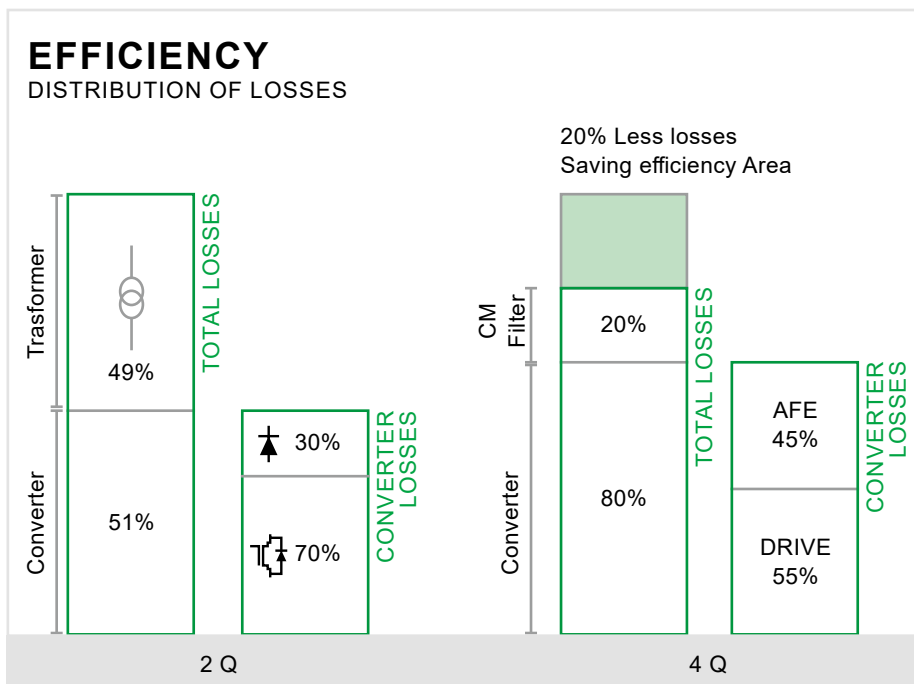


Nidec has more than forty years experience in designing and manufacturing of inverters and power quality solutions. The new SVFH series are AFE, high efficiency, direct-to-line connection (transformerless) VFDs with very low grid harmonics, 30% more compact and 60% less bulky when

compared with VFDs with transformer, very simple to integrate in a system, easy and fast to commission, with 4 quadrants operation capability to enable regenerative braking of the motor load, regeneration and power factor correction.

Key benefits of transformerless 4Q

- Unity power factor on grid side;
- Low input harmonics
- Inherent braking capability to quickly slow down high inertia loads without breaking resistors
- Inherent ability to recover energy by transmitting power back to grid
- Fast installation: 3 cables in, 3 cables out
- Small footprint
- High efficiency, low operating costs,
- Standard power modules for AFE and Motor converters: easy maintainability
- Well-proven technology IGBTs: high reliability
- Easy maintainability + high reliability = excellent availability: 99.5%



Technical Data

SVFH AFE		
Description	5L - Version	7L - Version
TECHNOLOGY		
Semiconductor & Control	IGBT/PWM	IGBT/PWM
Switching frequency	2 kHz	Up to 3 kHz
Output Voltage levels	5/9	7/13
Operation mode	4 quadrants	4 quadrants
Cooling	Forced Air	Forced Air
Efficiency	>= 97,8%	>= 98,5%
Design Standard	EN, IEC	EN, IEC
	IEEE	IEEE
	UL, NEMA, CSA GOST	UL, NEMA, CSA GOST
ENVIRONMENTAL CONDITIONS		
Installation	Indoor IP21 to IP42	Indoor IP21 to IP42
Operating temperature	0÷40°C (50°C with derating)	0÷40°C (50°C with derating)
Storage temperature	-20÷ 70°C	-20°C÷ 70°C
Max Altitude	1000 m a.s.l. higher on request	1000 m a.s.l. higher on request
GRID SIDE		
Input Voltage	3.3 -4.16 kV	6.0 – 6.9 kV
Input voltage tolerance	+/-10%	+/-10%
Input frequency	50Hz and 60 Hz	50Hz and 60 Hz
Harmonics	IEC61000-4-2	IEC61000-4-2
	IEEE 519	IEEE 519
MOTOR SIDE		
Output Voltage/Power	See table	See table
Output frequency	0 ÷ 75Hz	0 ÷ 110Hz
Current Harmonics	THD(I) < 5%	THD(I) < 3%
Motor type	Induction	Induction

SVFH – 5L & 7L Versions - Power range for 3.3 kV, 4.16 kV, 6.0 kV and 6.6 kV

	Rated Output Voltage	Rated Output Current	Rated Output Apparent Power	Rated Output Motor Shaft Power (1)		Overall Dimensions L x W x H
	[kV]	[A]	[kVA]	[kW]	[kVA]	[mm]
5L Version	3.3	70	400	349	400	2900 x 1200 x 2300
		140	800	699	800	
		220	1257	1098	1257	
	4.16	70	504	440	504	
		140	1009	881	1009	
7L Version	6.0	220	1585	1384	1585	3400 x 1200 x 2300
		70	727	635	727	
		140	1455	1270	1455	
	6.6	220	2286	1996	2286	
		70	800	699	800	
		140	1600	1397	1600	
		220	2515	2196	2515	

(1) The rated output motor shaft power is calculated with the formula $kW = kVA * EFF_{mot} * PF_{mot}$,
Where $EFF_{mot} = 0.97$ and $PF_{mot} = 0.90$