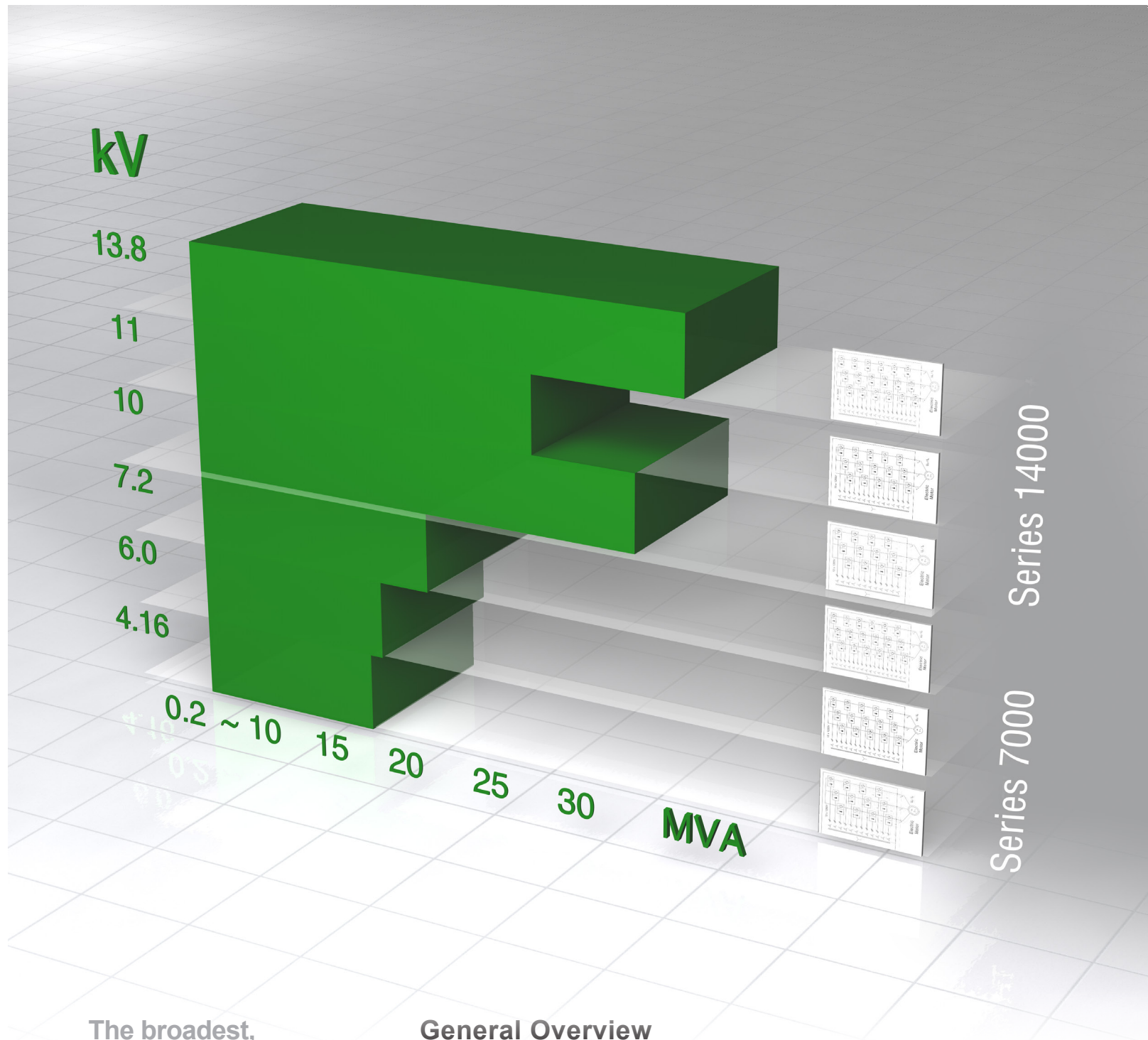


## Silcovert TH





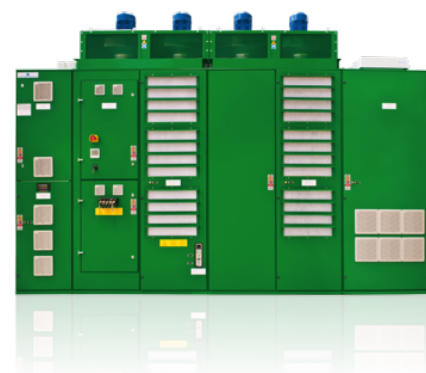


**The broadest,  
most reliable range  
of PWM drives  
in the market today**

## General Overview

SILCOVERT TH is a series of medium-voltage PWM Voltage Source Inverter for the most demanding applications where reliability and performance are fundamental requirements. Built around the most up-to-date IGBT technology, its multi-level structure makes it suitable for driving any motor at variable speed in the power range from 400 kVA to 100 MVA (4 containers/VFD in parallel), up to 13.8 kV

Flexible arrangement of all conversion system components, a high degree of standardization and various cooling options permit to design the right solution for even the most demanding customer requirements. For maximum adaptability, our modular design allows to configure drives with the right footprint for your needs.





# Main technical features



A well proven design using the most up-to-date IGBT technology is the basis of the product's reliability. Rigorous quality control during manufacturing guarantees the excellence of our inverters.

## Product Highlights

- Dynamic performance consistent with the most demanding process needs
- User-friendly interface
- High reliability
- Ease of installation and maintenance
- Compact Modular Design
- High Flexibility

All auxiliary circuits in one bay

### Isolation and protection

- Minimizes line distortion
- Enhanced safety for personnel & equipment





#### Front access

- Easy access
- Easy maintenance
- No additional space required behind the drive
- Direct monitoring



#### User friendly HMI & Drive controller

- Full digital graphic display for local inspection and control
- Simple Indications in complete language (English or other upon request)
- Motor control (V/Hz, sensorless, FOC algorithms)
- Advance Monitoring and protecting functions (transformer, VFC, motor)
- Auxiliary circuits management
- Hardwired and serial interface
- Remote monitoring and diagnostic capability

#### Key safety features

- Robust cabinets
- HV and LV circuits separation
- Key interlock block
- IP42 enclosure
- IEC 61800-5-1 compliant
- IEC 61800-5-2 compliant

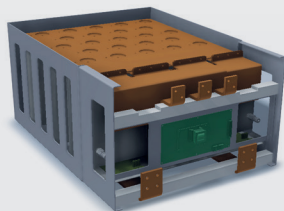


# Robust, Reliable and Compact

Our SILCOVERT TH Drives are a modular and flexible solution, suitable for cabinet and container installation for a wide variety of applications up to 100 MVA. We offer one of the most compact footprints on the market today.



cabinet with integrated or external transformer



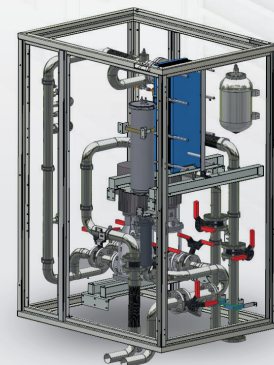
## Standard Power Modules

By placing modules in parallel we can rapidly configure the drive to match power needs. Providing the right power solution for an application helps guarantee optimum performance. We have a full range of modular solutions that allow the selection of a 12-pulse, 18-pulse, 24-pulse, 30-pulse, 36-pulse or 48-pulse passive diode rectifier (DFE). Power Modules are mounted in Stack Assembly, suitable for different installations, in cabinets or containers.



## Common Control Platform

Our Drives all use our state-of-the-art control system. This system allows perfect control of the whole process and enhances the efficiency in your plant. The system is based on a high performance 32 bit CPU that allows distributed control and processing plus network configuration that seamlessly integrates into any automation system.



## Cooling Options

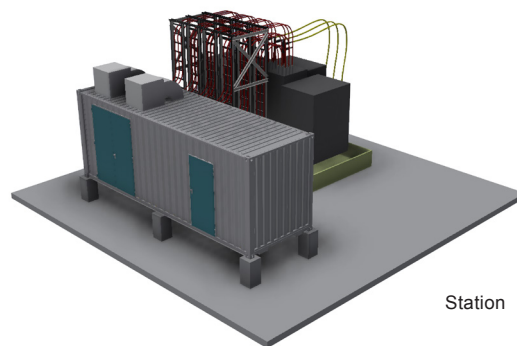
The drives can be air or water-cooled. Water cooled solutions are available with redundant capability for optimal plant integration. The water-cooled system significantly reduces ventilation and air conditioning costs for high power applications. For lower power ratings we use forced air-cooling. Our water cooled drives are ideal for industries like Metals and Cement where pollutants can compromise long-term performance. It is available with cooling option with external chiller.



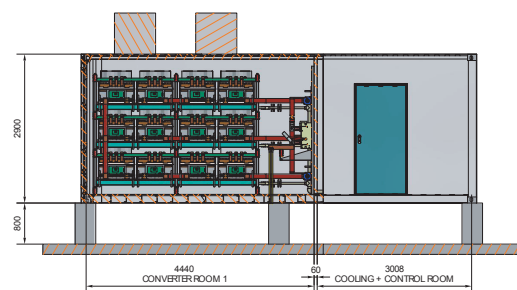


## Wide Range of Auxiliaries

Nidec equips its drives with a variety of auxiliaries according to application requirements. These can include: Switchgear, Transformers, Harmonic filters. As a standard our drives do not require Harmonic filters, however, they can be provided for particularly weak networks.



Station



Container

## Quality and State of the Art Production System

At Nidec we know that quality is determined by the Customer. Our 3Q6S quality model is designed to continuously improve and control the quality of our products and services. In our state of the art manufacturing plant in Milan, our R&D Department conducts advanced research in power devices and is able to work with customers on innovative products and prototypes. Our Engineering team works in close collaboration with R&D Department to optimize package configuration. We are committed to your quest for success.



Driving Continuous Improvement  
Among Workers, Company and Products

# Markets & Applications



## Water & Wastewater



In a growing number of regions throughout the world, maintaining access to a clean and sustainable water supply is becoming a major challenge. To solve today's water and wastewater problems, operators need to improve operational efficiency and lower energy costs, the single largest expense at most plants. Our vast experience in pump solutions makes us an ideal partner for your water process needs. Our variable speed drives deliver immediate, measurable bottomline savings and help optimize water supply. Our goal is to help treatment facilities minimize maintenance and optimize performance.

### VFD TYPICAL FIELD OF APPLICATION:

- Pumps

## Oil & Gas







Nidec Industrial Solutions produces electric drive systems that deliver maximum uptime and lower operating expense, both offshore and on land. Whether you need a single component or a fully integrated electrical package, we offer full support throughout the life of your plant. That includes engineering-to-order design capabilities that enable us to optimize an electric drive system for maximum efficiency.

#### **VFD TYPICAL FIELD OF APPLICATION:**

- compressors, extruders and pumps

## **Energy**

Ensuring grid stability is at the core of every solution we deliver to the power industry. Whether we are acting as primary contractor for the installation of a smart micro grid or delivering stand-alone products, our systems integrate seamlessly with your existing energy network and equipment. Rigorous quality assurance systems ensure maximum performance, high efficiency and long term reliability.

Our experience and VFD technology allow us to provide flexible and efficient motion and flow control that deliver cost savings, environmental sustainability and other benefits.

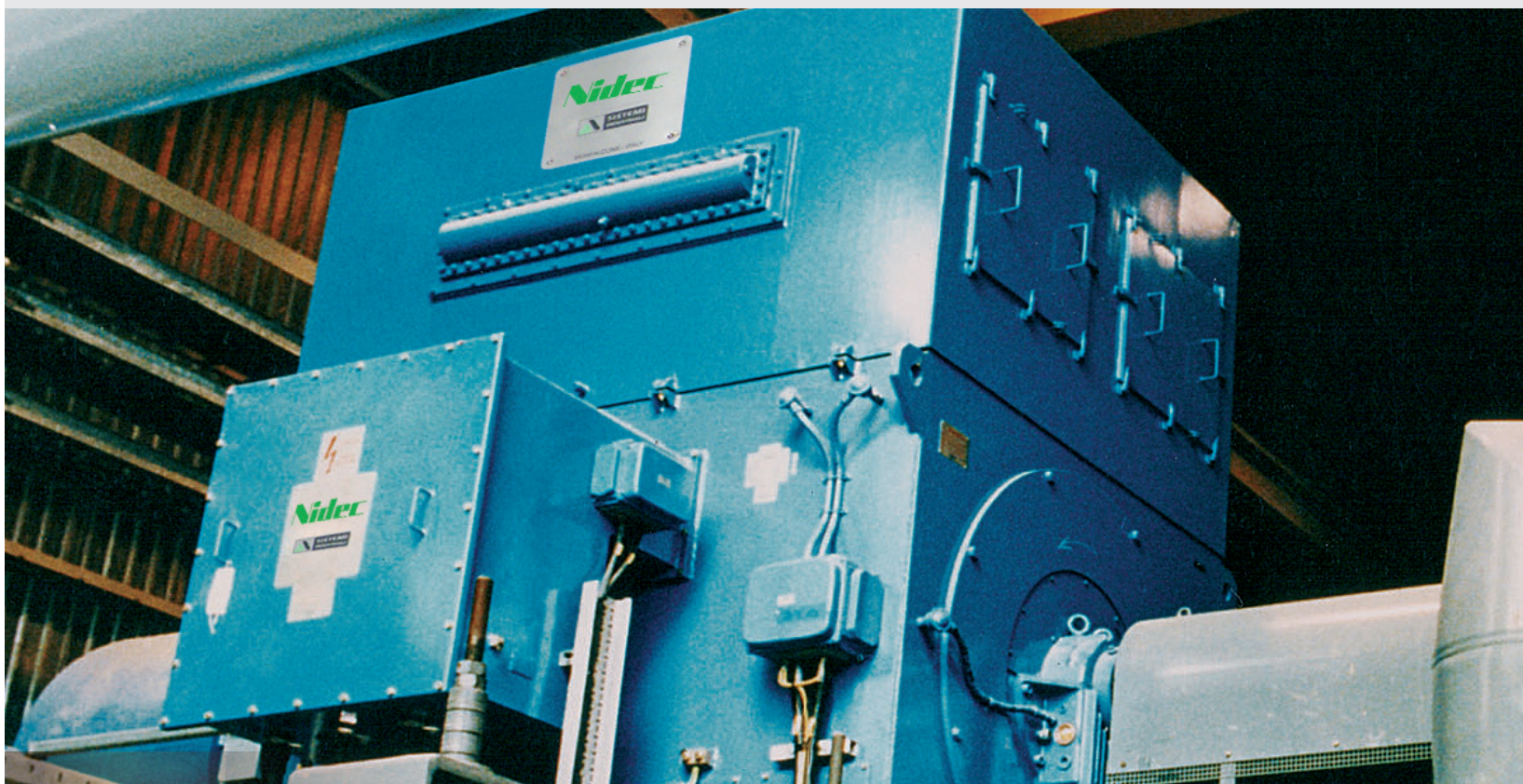


#### **VFD TYPICAL FIELD OF APPLICATION:**

- Pumps, FD and ID fans, boiler feed pumps



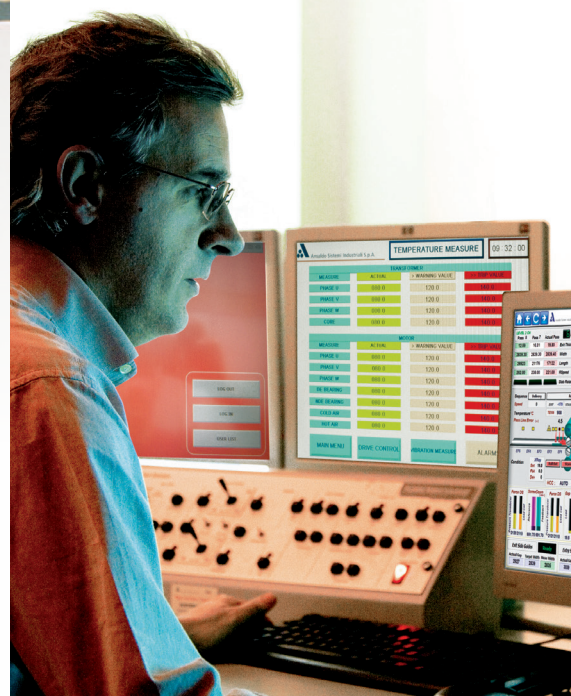
# High Performance



## Efficiency

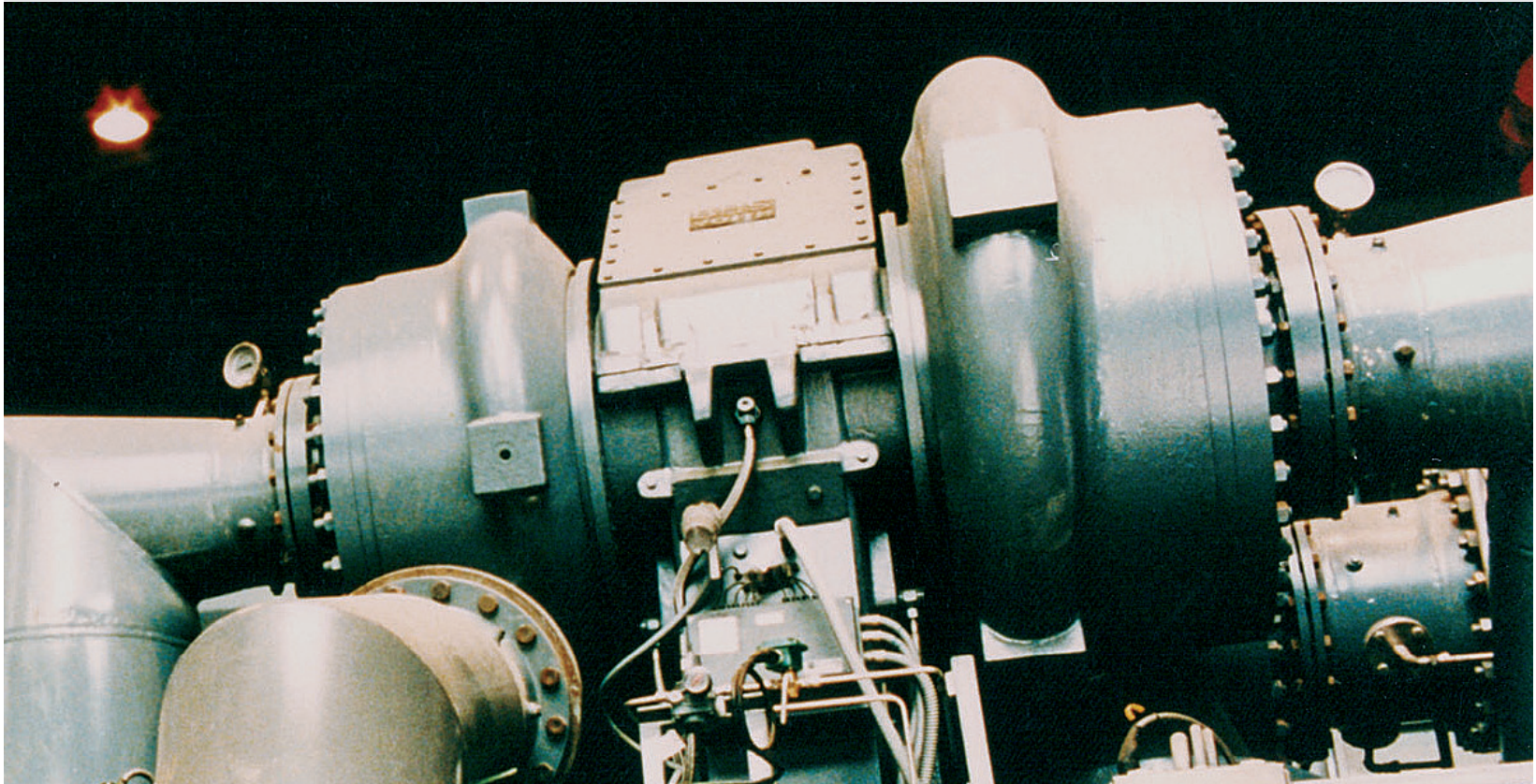
A well proven design using the most up-to-date IGBT technology is the basis of the product's reliability. Rigorous quality control during manufacturing guarantees the excellence of our inverters. Various factors contribute to high efficiency, a must for our drives. We carefully select the power components and the way they are driven in order to reduce losses to an optimal level. The control functions are also optimized for driving the motor at the required torque in order to ensure maximum possible efficiency.

## Low network harmonics

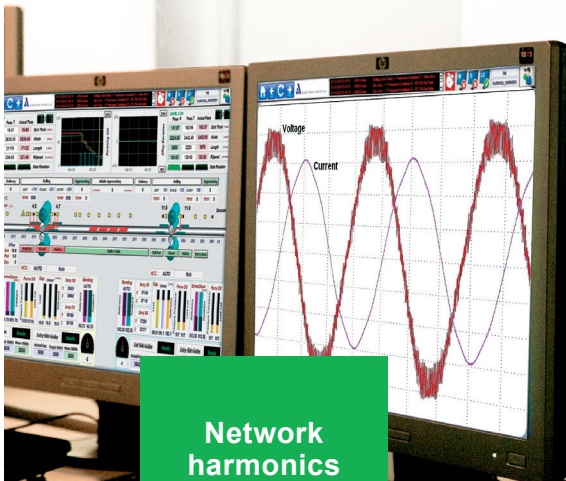


Efficiency  
**>98%**





An ideal frequency converter should control energy flow without generating voltage and current harmonics. Our MV drives ensure excellent power factor line-side in every working condition due to the full-wave rectification using multi-phase diode operation. The harmonic content meets the most stringent requirements for current and voltage harmonic distortion as defined by IEC and NEMA standards. The harmonic content motor-side is also extremely low thanks to our Pulse Width Modulation (PWM) control that eliminates network harmonics without increasing the drive's complexity.



**Network  
harmonics  
≤ 3%**

## Mean Time Between Failure (MTBF)



Silcovert-TH has a MTBF of 200,000 hours by design. This target is met thanks to the selection of first-class core components such as film capacitors (instead of electrolytic capacitors), high-quality cooling fans from leading manufacturers, tinplated copper bars suitable for harsh environments, and rigorous insulating clearances. All of these components contribute to maximize availability of the drive

**MTBF  
200.000  
Hours**

# Series 7000

	Base	Option
<b>Power configuration</b>		
Dry Type Integrated Transformer - Aluminium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dry Type Integrated Transformer - Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input line measurements (current and voltage)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input manual disconnect switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input manual earth switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output manual disconnect switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output manual earth switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output reactor dV/dt filter or for motor cable length > 600 mt	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output sinusoidal filter	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output reactor for hot by-pass	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Air cooling configuration</b>		
No redundant fan	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Redundant N-1 fan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Water cooling configuration</b>		
Water/Water Heat exchanger	<input checked="" type="checkbox"/>	<input type="checkbox"/>
External Air/Water Dry cooler or chiller (option)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 way valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 pumps for IGBT cooling + 2 pumps for ext. Air/water Heat Dry Cooler	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Separate water cooling cubicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set of cooling circuit measurements	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Environmental Conditions</b>		
Energy / Industrial - Classification of chemically active substances ≤ class 3C1 as per Tab. 4 of IEC 60721-3-3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Presence of chemically active substances: class 3C2 and only for Hydrogen Sulphide (H <sub>2</sub> S) class 3C3 as per Tab. 4 of IEC 60721-3-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marine	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vibrations: cl. 3M1 IEC 721-3-3 – displac. 2....9Hz = 0,3 mm acceler. 9...200Hz = 1m/s <sup>2</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vibrations: other with AVM ( dampers) basement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Mechanical &amp; Lay out</b>		
Bottom Input power and auxiliary cables	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Top Input power and auxiliary cables	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Painting: powder paint of "epoxy polyester"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Painting: other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Painting color: RAL 7035	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Painting color: other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Control &amp; Protection</b>		
CPU Board with integrated PLC	<input checked="" type="checkbox"/>	<input type="checkbox"/>



# Standard Features and Options

	Base	Option
CPU Board with commercial PLC	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Base control features	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Speed set and feedback redundant	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Redundant 24V DC supply.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Signaling lamps and/or acoustic signal on control door (Ready; Run; Stop; Warning; Trip )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Command and feedback from Push Button Unit	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set of speed,current,power feedback. Indicate destination: for analog instruments on control door or for PBU or external equipments	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Arc detector on Transformer and Inverter cubicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control transformer temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control Output reactor temperature	<input type="checkbox"/>	<input type="checkbox"/>
Temperature alarm and trip of control cubicle (thermostat)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature alarm and trip of power cubicle (Pt100 on transformer and inverter and output reactor if present)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Auxiliary</b>		
N° 3 input line: 400V 50Hz – 230V 50Hz from Customr UPS - 230V 50Hz for services (Other voltage & frequency optional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Internal UPS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Circuit for 2ph 230V services from 3ph auxiliary feeder.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air/water Dry Cooler fans feeder and control	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Motor Interface &amp; Other Motor Protections</b>		
Motor space heater feeder and control. Indicate Voltage; Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Motor Fans feeder and control (Rated Power : n° 4 x 0,75 ÷ 7,5 kW)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jecking Oil feeder and control, Indicate DE /NDE, Voltage; Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pt100 for monitoring and control motor temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control motor temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Motor protection Relay with only Ct's or Ct's and VT's	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Communications</b> (Command/Feedback by network)		
Profibus	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethernet	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modbus RTU	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Special Drive Configuration</b>		
Cold By-Pass	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hot By-Pass with synchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Softstarter	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# Series 7000

## Air Cooled Version - No Overload

Motor Shaft Power (kW)	Output capacity (kVA)	Rated Output Current (A)	Model	* Dimensions (L x W x H)	Weight (kg)
<b>2400 V - 270-2800 kVA</b>					
254	291	70	SVTH 290 A24 18P	1700x1200x2955	3000
381	436	105	SVTH 440 A24 18P	1700x1200x2955	3000
508	582	140	SVTH 580 A24 18P	1700x1200x2955	3000
762	873	210	SVTH 870 A24 18P	2000x1400x3155	4500
980	1122	270	SVTH 1K1 A24 18P	2000x1400x3155	4500
1306	1496	360	SVTH 1K5 A24 18P	2500x1400x3355	5000
1742	1995	480	SVTH 2K0 A24 18P	2500x1400x3355	5000
1996	2286	550	SVTH 2K3 A24 18P	3550x1400x2770	5500
2359	2702	650	SVTH 2K7 A24 18P	3550x1400x2770	5500
<b>3300 V - 400-1500 kVA</b>					
349	400	70	SVTH 400 A33 18P	2000x1200x3150	4000
524	600	105	SVTH 600 A33 18P	2000x1200x3150	4000
699	800	140	SVTH 800 A33 18P	2000x1200x3150	4000
1048	1200	210	SVTH 1K2 A33 18P	2500x1400x3350	5000
1347	1543	270	SVTH 1K5 A33 18P	2500x1400x3350	5000
1796	2058	360	SVTH 2K1 A33 18P	4100x1400x2770	7500
2395	2744	480	SVTH 2K7 A33 18P	4100x1400x2770	7500
2744	3144	550	SVTH 3K1 A33 18P	5400x1400x2970	8500
3243	3715	650	SVTH 3K7 A33 18P	5400x1400x2970	8500
<b>4160 V - 500 - 4700 kVA</b>					
440	504	70	SVTH 500 A41 24P	2000x1200x3150	4000
660	757	105	SVTH 750 A41 24P	2000x1200x3150	4000
881	1009	140	SVTH 1K0 A41 24P	2000x1200x3150	4000
1321	1513	210	SVTH 1K5 A41 24P	2500x1400x3350	5000
1698	1945	270	SVTH 1K9 A41 24P	2500x1400x3350	5000
2264	2594	360	SVTH 2K6 A41 24P	4100x1400x2770	7500
3019	3459	480	SVTH 3K5 A41 24P	4100x1400x2770	7500
3460	3963	550	SVTH 4K0 A41 24P	5400x1400x2970	8500
4089	4683	650	SVTH 4K7 A41 24P	5400x1400x2970	9500
<b>6000 V - 700 - 6800 kVA</b>					
635	727	70	SVTH 700 A60 30P	3050x1200x2970	5200
953	1091	105	SVTH 1K1 A60 30P	3450x1200x2770	5900
1270	1455	140	SVTH 1K4 A60 30P	3450x1200x2770	5900
1905	2182	210	SVTH 2K2 A60 30P	4000x1200x2770	6500
2450	2806	270	SVTH 2K8 A60 30P	4000x1200x2770	6500
3266	3741	360	SVTH 3K7 A60 30P	5500x1400x2970	8400
4355	4988	480	SVTH 5K0 A60 30P	5900x1400x2970	10200
4990	5716	550	SVTH 5K7 A60 30P	6200x1400x2970	10900
5897	6755	650	SVTH 6K8 A60 30P	6500x1400x3350	11600
<b>6600 V - 800 - 7400 kVA</b>					
699	800	70	SVTH 800 A66 36P	3250x1200x2970	5500
1048	1200	105	SVTH 1K2 A66 36P	3650x1200x2770	6200
1397	1600	140	SVTH 1K6 A66 36P	3650x1200x2770	6200
2096	2401	210	SVTH 2K4 A66 36P	4200x1200x2770	7000
2695	3087	270	SVTH 3K1 A66 36P	4200x1200x2770	7000
3593	4115	360	SVTH 4K1 A66 36P	6300x1400x2970	10700
4790	5487	480	SVTH 5K5 A66 36P	6300x1400x2970	10700
5489	6287	550	SVTH 6K3 A66 36P	7000x1400x3350	11600
6487	7430	650	SVTH 7K4 A66 36P	7000x1400x3350	11600
<b>7200 V - 870 - 8100 kVA</b>					
762	873	70	SVTH 870 A72 36P	3250x1200x2970	5500
1143	1309	105	SVTH 1K3 A72 36P	3650x1200x2770	6200
1524	1746	140	SVTH 1K7 A72 36P	3650x1200x2770	6200
2286	2619	210	SVTH 2K6 A72 36P	4200x1200x2770	7000
2939	3367	270	SVTH 3K4 A72 36P	4200x1200x2770	7000
3919	4489	360	SVTH 4K5 A72 36P	6300x1400x2970	10700
5226	5986	480	SVTH 6K0 A72 36P	6300x1400x2970	10700
5988	6859	550	SVTH 6K9 A72 36P	7000x1400x3350	11600
7077	8106	650	SVTH 8K1 A72 36P	7000x1600x3350	12200

Data about Air Cooled Version – 110% Class 1 and 150% Class 2 is available under request | Higher power ratings available upon request. | \*Transformer not included.



# Technical Data

## Water Cooled Version - No Overload

Motor Shaft Power (kW)	Output capacity (kVA)	Rated Output Current (A)	Model	* Dimensions (L x W x H)	Weight (kg)
<b>4160 V - 4000-12200 kVA</b>					
3460	3963	550	SVTH 4K0W41 24P	4300x1400x2410	6800
4089	4683	650	SVTH 4K7W41 24P	4300x1400x2410	6800
5032	5764	800	SVTH 5K8W41 24P	4300x1400x2410	6800
7234	8286	1150	SVTH 8K3W41 24P	6100x1600x2410	12800
9435	10808	1500	SVTH 10K8 A41 24P	6100x1600x2410	12800
10693	12249	1700	SVTH 12K2W41 24P	6100x1600x2410	12800
<b>6000V - 5700-17700 kVA</b>					
4990	5716	550	SVTH 5K7W60 30P	4900x1400x2410	7500
5897	6755	650	SVTH 6K8W60 30P	4900x1400x2410	7500
7258	8314	800	SVTH 8K3W60 30P	4900x1400x2410	7500
10433	11951	1150	SVTH 12K0W60 30P	7000x1600x2410	14500
13609	15588	1500	SVTH 15K6W60 30P	7000x1600x2410	14500
15423	17667	1700	SVTH 17K7W60 30P	7000x1600x2410	14500
<b>6600V - 6300-19400 kVA</b>					
5489	6287	550	SVTH 6K3W66 36P	5300x1400x2410	8200
6487	7430	650	SVTH 7K4W66 36P	5300x1400x2410	8200
7984	9145	800	SVTH 9K1W66 36P	5300x1400x2410	8200
11477	13146	1150	SVTH 13K1W66 36P	7900x1600x2410	15900
14970	17147	1500	SVTH 17K1W66 36P	7900x1600x2410	15900
16966	19434	1700	SVTH 19K4W66 36P	9100x1600x2410	15900
<b>7200V - 6900-21200 kVA</b>					
5988	6859	550	SVTH 6K9W72 36P	5300x1400x2410	8200
7077	8106	650	SVTH 8K1W72 36P	5300x1400x2410	8200
8710	9977	800	SVTH 10K0W72 36P	5300x1400x2410	8200
12520	14341	1150	SVTH 14K3W72 36P	7900x1600x2410	15900
16330	18706	1500	SVTH 18K7W72 36P	7900x1600x2410	15900
18508	21200	1700	SVTH 21K2W72 36P	7900x1600x2410	15900

Data about Air Cooled Version – 110% Class 1 and 150% Class 2 is available under request | Higher power ratings available upon request. | \*Transformer not included.

# Series 14000

	Base	Option
<b>Power configuration</b>		
Dry Type Integrated Transformer - Aluminium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dry Type Integrated Transformer - Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input line measurements (current and voltage)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input manual disconnect switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input manual earth switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output manual disconnect switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output manual earth switch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output reactor dV/dt filter or for motor cable length > 600 mt	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output sinusoidal filter	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Output reactor for hot by-pass	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Air cooling configuration</b>		
No redundant fan	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Redundant N-1 fan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Water cooling configuration</b>		
Water/Water Heat exchanger	<input checked="" type="checkbox"/>	<input type="checkbox"/>
External Air/Water Dry cooler or chiller (option)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 way valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 pumps for IGBT cooling + 2 pumps for ext. Air/water Heat Dry Cooler	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Separate water cooling cubicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set of cooling circuit measurements	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Environmental Conditions</b>		
Energy / Industrial - Classification of chemically active substances ≤ class 3C1 as per Tab. 4 of IEC 60721-3-3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Presence of chemically active substances: class 3C2 and only for Hydrogen Sulphide (H <sub>2</sub> S) class 3C3 as per Tab. 4 of IEC 60721-3-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Marine	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vibrations: cl. 3M1 IEC 721-3-3 – displac. 2....9Hz = 0,3 mm acceler. 9...200Hz = 1m/s <sup>2</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vibrations: other with AVM ( dampers) basement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Mechanical &amp; Lay out</b>		
Bottom Input power and auxiliary cables	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Top Input power and auxiliary cables	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Painting: powder paint of "epoxy polyester"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Painting: other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Painting color: RAL 7035	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Painting color: other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Control &amp; Protection</b>		
CPU Board with integrated PLC	<input checked="" type="checkbox"/>	<input type="checkbox"/>



# Standard Features and Options

	Base	Option
CPU Board with commercial PLC	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Base control features	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Speed set and feedback redundant	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Redundant 24V DC supply.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Signaling lamps and/or acoustic signal on control door (Ready; Run; Stop; Warning; Trip )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Command and feedback from Push Button Unit	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set of speed,current,power feedback. Indicate destination: for analog instruments on control door or for PBU or external equipments	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Arc detector on Transformer and Inverter cubicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control transformer temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control Output reactor temperature	<input type="checkbox"/>	<input type="checkbox"/>
Temperature alarm and trip of control cubicle (thermostat)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature alarm and trip of power cubicle (Pt100 on transformer and inverter and output reactor if present)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Auxiliary</b>		
N° 3 input line: 400V 50Hz – 230V 50Hz from Customr UPS - 230V 50Hz for services (Other voltage & frequency optional)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Internal UPS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Circuit for 2ph 230V services from 3ph auxiliary feeder.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air/water Dry Cooler fans feeder and control	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Motor Interface &amp; Other Motor Protections</b>		
Motor space heater feeder and control. Indicate Voltage; Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Motor Fans feeder and control (Rated Power : n° 4 x 0,75 ÷ 7,5 kW)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jecking Oil feeder and control, Indicate DE /NDE, Voltage; Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pt100 for monitoring and control motor temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Second set Pt100 for monitoring and control motor temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Motor protection Relay with only Ct's or Ct's and VT's	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Communications</b> (Command/Feedback by network)		
Profibus	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ethernet	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modbus RTU	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Special Drive Configuration</b>		
Cold By-Pass	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hot By-Pass with synchronization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Softstarter	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# Series 14000

## Cabinet solutions

### Air Cooled Version - No Overload

Motor Shaft Power (kW)	Output capacity (kVA)	Rated Output Current (A)	Model
10000 V			
1890	2165	125	SVTH 2K2 A10 24P
3780	4330	250	SVTH 4K3 A10 24P
6048	6928	400	SVTH 6K9 A10 24P
7560	8660	500	SVTH 8K7 A10 24P
9072	10392	600	SVTH 10K4 A10 24P
11000 V			
2079	2382	125	SVTH 2K4 A11 30P
4158	4763	250	SVTH 4K8 A11 30P
6653	7621	400	SVTH 7K6 A11 30P
8319	9526	500	SVTH 9K5 A11 30P
9980	11432	600	SVTH 11K4 A11 30P
13800 V			
2608	2988	125	SVTH 2K4 A11 30P
5217	5976	250	SVTH 4K8 A11 30P
8347	9561	400	SVTH 7K6 A11 30P
10433	11951	500	SVTH 9K5 A11 30P
12520	14341	600	SVTH 11K4 A11 30P

### Water Cooled Version - No Overload

Motor Shaft Power (kW)	Output capacity (kVA)	Rated Output Current (A)	Model
10000 V			
2646	3031	175	SVTH 3K0 W10 24
5292	6062	350	SVTH 6K1 W10 24P
8468	9699	560	SVTH 9K7 W10 24P
10585	12124	700	SVTH 12K1 W10 24P
12701	14549	840	SVTH 14K5 W10 24P
15877	18187	1050	SVTH 18K2 W10 24P
19052	21824	1260	SVTH 21K8 W10 24P
11000 V			
2911	3334	175	SVTH 3K3 W11 30P
5822	6668	350	SVTH 6K7 W11 30P
9314	10669	560	SVTH 10K7 W11 30P
11643	13337	700	SVTH 13K3 W11 30P
13972	16004	840	SVTH 16K0 W11 30P
17465	20005	1050	SVTH 20K0 W11 30P
20957	24006	1260	SVTH 24K0 W11 30P
13800 V			
3652	4183	175	SVTH 4K2 W13 36P
7303	8366	350	SVTH 8K4 W13 36P
11685	13385	560	SVTH 13K4 W13 36P
14607	16732	700	SVTH 16K7 W13 36P
17528	20078	840	SVTH 20K1 W13 36P
21910	25097	1050	SVTH 25K1 W13 36P
26292	30117	1260	SVTH 30K1 W13 36P

Data about Air and Water Cooled Version – 110% Class 1 and 150% Class 2 is available under request. | Higher power ratings available upon request.



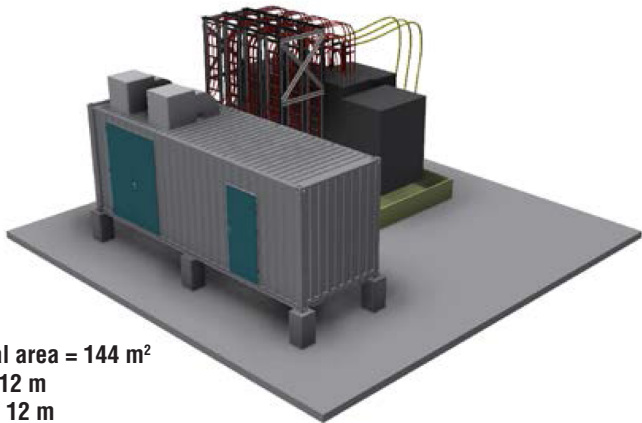
## Container Solution

### Water Cooled Version - No Overload

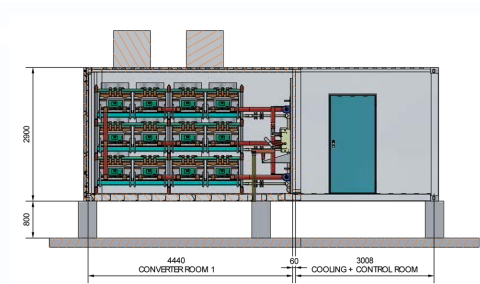
Motor Shaft Power (kW)	Output capacity (kVA)	Rated Output Current (A)	Model
10000 V			
10585	12124	700	SVTH 12K1 W10 24P
12701	14549	840	SVTH 14K5 W10 24P
15877	18187	1050	SVTH 18K2 W10 24P
19052	21824	1260	SVTH 21K8 W10 24P
21169	24249	1400	SVTH 24K2 W10 48P
25403	29098	1680	SVTH 29K1 W10 48P
11000 V			
11643	13337	700	SVTH 13K3 W11 30P
13972	16004	840	SVTH 16K0 W11 30P
17465	20005	1050	SVTH 20K0 W11 30P
20957	24006	1260	SVTH 24K0 W11 30P
13800 V			
14607	16732	700	SVTH 16K7 W13 36P
17528	20078	840	SVTH 20K1 W13 36P
21910	25097	1050	SVTH 25K1 W13 36P
26292	30117	1260	SVTH 30K1 W13 36P

### Examples of our pre-engineered configuration

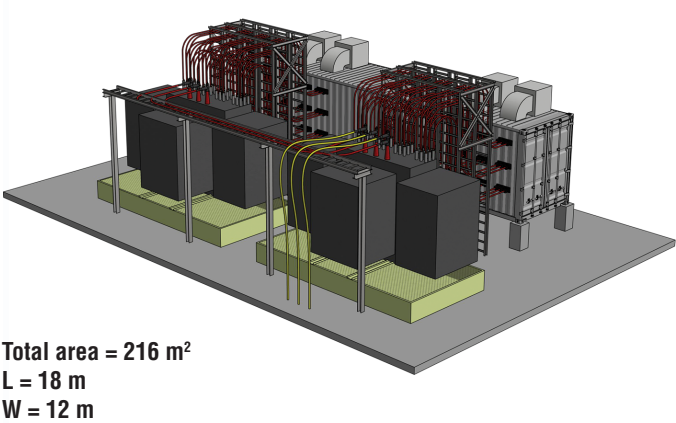
#### 14.5 MVA Solution



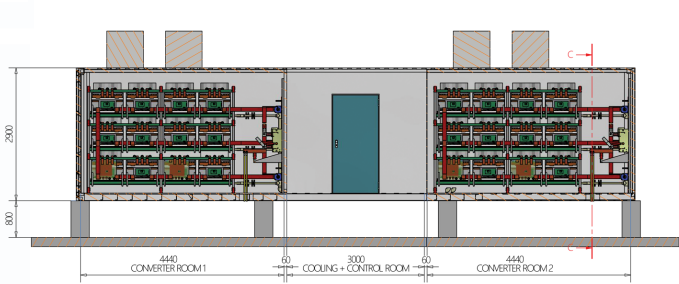
#### Internal Container Layout



#### 29 MVA Solution



#### Internal Container Layout



Data about other configurations are available under request. | Higher power ratings available upon request.



**INDUSTRIAL SOLUTIONS**