



*Variable frequency drives*  
**Vector V900**

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High-performance variable frequency drives with vector control

Information catalog



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**PROFI<sup>®</sup>**  
**NET**

 **Modbus**



**CLOSED LOOP CONTROL**

**CAN** link



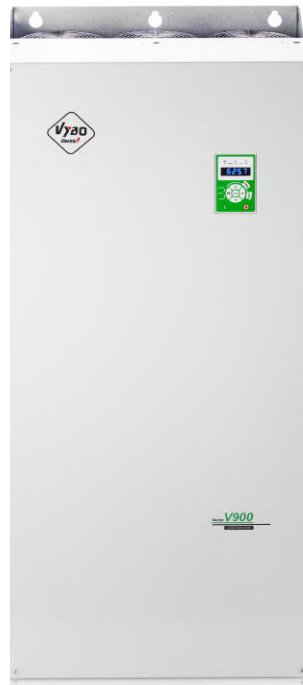
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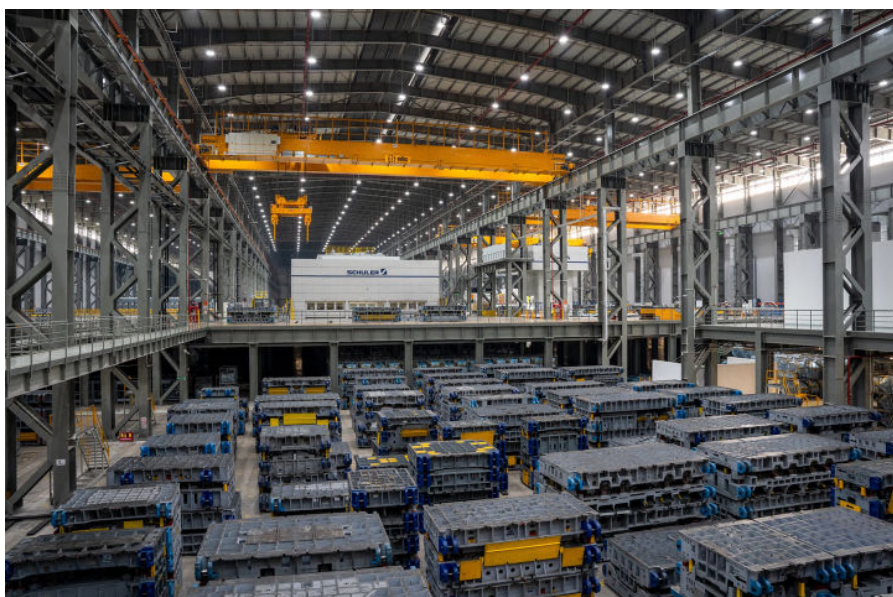




# Variable frequency drivers

# **Vector V900**

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# Quality management and certificates



VYBO Electric is a modern High-tech energy saving company that pays high attention to quality, environment, safety and precision and efficiency of work and energy in production. Therefore, it holds a lot of certificates and quality control systems. **Our priority is quality control.**

## Basic certificates include:

### ISO9001

The primary task of the ISO 9001 standard is to focus on system management and quality management in the organization. The satisfaction of the customer and the fulfillment of his requirements, which are specified in contracts, orders, or technical drawings, are in the first place. The quality management system is linked to all processes in the company. The standard focuses on the management of human and financial resources, on the stability of infrastructure, including buildings, transport, hardware, software and other communication or information technologies. An important part is also the planning of production and services, the management of the purchasing process, but also the management of non-conforming products.



### ISO14001

The main priority of the ISO 14001 standard is to identify and understand the environmental aspects and activities that are related to the entire infrastructure of the company and, based on this, to regulate the environmental impact on the environment.

In its scope, the ISO 14001 standard creates the conditions for determining environmental goals and plans, the fulfillment of which is examined at regular intervals by top management and also by an independent body during internal audits.

This standard is intended for all organizations and companies that consider environmental protection as their primary goal.

The benefit of the standard for society is mainly:

- control over the environmental impact on the environment
- control over produced emissions and waste
- saving material and energy
- prevention of accidents
- compliance of the company's activities with legal requirements
- zero fines for environmental behavior
- creation of a good reputation and prestige of the company



## The ISO 45001

Specification (formerly known as OHSAS 18001) is an internationally recognized standard that declares compliance with the principles of a safe enterprise, managing risks at work and protecting the health of workers during work. It does not only concern danger and accidents, but also emphasizes other aspects such as the good condition and mental well-being of the employee.

The certificate is held in Slovakia as STN ISO 45001:2019 and is under the title Management systems of safety and health protection at work. Requirements with guidance for use. It replaces the STN OHSAS 18001 standard.



## ISO50001

Energy management systems Energy efficiency help organizations save money, save energy resources and also help to prevent climate change. ISO 50001 encourages organizations in all sectors to use energy more efficiently through the development of an energy management system. The international standard ISO 50001: 2011 specifies the requirements for building, maintaining and improving the energy system. It aims to enable organizations to implement a systematic approach that will help achieve lasting improvements in energy efficiency, energy use and consumption.





*Variable frequency drivers*

# **Vector** **V900**

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- ▶ CLOSED LOOP VECTOR CONTROL
- ▶ MAXIMUM EQUIPMENT
- ▶ PROFINET



SOLUTIONS FOR INDUSTRY



## Variable frequency drivers

# Vector **V900**

V900 series variable frequency drivers are designed for the most demanding and complicated professional applications. These are vector frequency converters with a wide range of applications. They handle an overload of up to 180% for 3 seconds and an overload of 150% for 60 seconds. They are designed to handle huge loads. A large performance range with different frequency converter configurations and many additional options allows the use of one platform for many requirements.



### Variable frequency drive **V900**

#### **FUNCTIONS**

- Single-phase frequency converter power supply voltage 1 x 230 V and three-phase 3 x 400 V
- Input frequency range 47 to 63 Hz
- Closed-loop vector control (above 3.7 kW)
- Maximum frequency 0 to 600 Hz
- Torque boost function of the electric motor by up to 30%
- V900 is suitable for controlling asynchronous and synchronous motors
- MODBUS RTU and PROFINET communication protocol
- Built-in PID



SOLUTIONS FOR **INDUSTRY**

Most often, V900 is used to control fan drives, pumps, centrifuges, gearboxes, to drive machines in the textile, ceramic, food industry, etc.

# Use in industry



## FUNCTIONS

- pumps
- air conditioning
- textiles
- grocery store
- electric transmissions
- ceramics
- grinders
- centrifugal machines
- cutters
- diving machines
- cutting machines



# Variable frequency drivers

# Vector **V900**



# General technical parameters for all types of V900

Power supply	Input voltage range: 1 x 230 V AC $\pm$ 10 % 3 x 400 V AC $\pm$ 10 %
Input frequency resolution	Power frequency range: 47 to 63 Hz
Control mode	<b>V/F</b> control <b>SFVC</b> vector control with open circuit <b>CLVC</b> vector control with closed circuit (above 4,0 kW)
Maximum frequency	0 - 600 Hz
Carrier frequency	0.5 kHz - 8 kHz The carrier frequency is automatically set based on the load characteristic.
Input frequency resolution	Digital setting 0.01 Hz Analog setting: maximum frequency x 0.025%
Initial torque	G type: 0.5 Hz / 150 % (SFVC) P type: 0.5 Hz / 180 % (CLVC) P type: 0.5 Hz / 100 %
Speed range	1:100 (SVC) 1:1000 (CLVC)
Speed stability	$\pm$ 0,5 % (SVC) $\pm$ 0,2% (CLVC)
Overloadability	G type: 60s for 150% of rated current, 3s for 180% rated current P type: 60s for 120% of rated current, 3s for 150% of rated current
Increase torque	Automatic torque increase or manual increase by user from 0,1 % to 30,0 %
V/F curve	Linear V/F curve Multipoint V/F curve N-voltage V/F curve (multiple 1,2*voltage, 1,4*voltage, 1,6*voltage, 1,8*voltage, square)
V/F separation	Two types: full separation; half separation
Ramp modes	Linear ramp 4 groups of acceleration / deceleration times with a range of 0.0-6500.0 s
DC braking	Braking frequency: 0.0 Hz to maximum frequency Braking time: 0.0-36.0 s Braking current value: 0.0% -100.0%



# General technical parameters for all types of V900

Control in JOG mode (stepping)	JOG frequency range: 0.00-50.00 Hz JOG acceleration / deceleration time: 0.0-6500.0 s
Simple PLC, multiple preset speeds	Implemented up to 16 speeds using a simple PLC function or combination of end states of clamps
Built-in PID regulator	Facilitates a process-controlled closed-loop control system.
Automatic voltage regulation (AVR)	It can automatically maintain a constant output voltage when the supply voltage changes.
Overvoltage and overcurrent control	Current and voltage are automatically limited during operation to prevent frequent tripping due to overvoltage and overcurrent.
Fast limit of current	Helps prevent common errors due to AC motor overcurrent
Torque and steering limitation	It can automatically limit the torque and prevent frequent overcurrent change during running. Torque control can be implemented in CLVC mode
High performance	AC motor control is performed by high-performance vector current control technology.
PG card support	Support for differential input PG card, resolver PG card, rotary transformer PG card, etc. PG cards can be connected to models V900-4T0040 and larger PG cards can be connected to models V900-2S0040 and 2S0055
STO safety function	"Emergency Stop" system: in case of emergency, stops the inverter immediately, after activating the J4 switch on the STO.
PTC motor temperature control	Input for PTC motor or thermal contact protection.
Time management	Time range: 0 - 6500 minutes
Communication protocol	MODBUS RTU; PROFINET
Boot Command Channel	Control panel / Control terminals / Serial communication port You can switch between these sources in different ways.
Frequency source	10 kinds of frequencies , Setting digital, analog voltage, analog current, pulse, serial port. You can switch between these sources in different ways.
Auxiliary frequency source	10 kinds of frequencies. Allows fine tuning of auxiliary frequency and frequency synthesis.



# General technical parameters for all types V900

Input terminals	5 digital inputs for types 0,4 - 5,5 kW 1 analog input for types 0,4 - 5,5 kW 6 digital inputs for types above 7,5 kW 2 analog inputs for types above 7,5 kW
Output terminals	1 high-speed pulse output (open collector) 1 relay output for types 0,4 - 5,5 kW 1 analog output for models 0,4 - 5,5 kW
	2 relay outputs for types 7,5 - 500 kW 2 analog outputs for performance 7,5 - 500 kW 1 high-speed pulse output (open collector)
EMC (compatibility)	IE 61000-4-6; IEC 61000-4-4; IEC 61000-4-11; IEC 61000-4-5
Standards	EN/IEC 61800-3:2017; C1, which is suitable for the 1st environment; EN/IEC 61800-3:2017; C2, which is suitable for the 1st environment;
LED display	Displays parameters
Lock keys and select features	Can block buttons partially or completely and define the range of functions of some buttons to prevent malfunctions.
Protection mode	Motor short-circuit detection at power-up, input/output phase loss protection, over-current protection, over-voltage protection, under-voltage protection, over-temperature protection and overload protection.
Installing in an environment	Install indoors, avoid direct sunlight, salt, dust, corrosive or flammable gas, smoke, steam. Resistance to chemical contaminants class 3C3 EN/IEC 60721-3-3 Dust pollution resistance 3S3EN/IEC 60721-3-3.
Height above sea level	Under 1000 m n.m (reduce the power when used above 1000 m.n.m.)
Ambient temperature	-10 °C - 40 °C (reduce the power when used above 40 °C (max. to 50 °C)
Humidity	Less than 95% relative humidity, no condensation IEC 60068-2-3
Vibration	Less than 5,9 m/s <sup>2</sup> (0,6g) IEC 60068-2-6
Storage temperature	- 20 °C to + 60°C



## Performance parameteres of V900 series

Model	Rated output power (kW)	Maximum input current (A)	Rated output current (A)	Recommended motor power (kW)
1PH / 3PH AC 230 V $\pm$ 15%				
V900-2S0004	0,4	5,4	2,5	0,4
V900-2S0007	0,75	7,2	5	0,75
V900-2S0015	1,5	10	7	1,5
V900-2S0022	2,2	16	10	2,2
V900-2S0030	3	17	16,5	3
3PH / 3PH AC 400 V $\pm$ 15%				
V900-4T0007	0,75	3,8	2,5	0,75
V900-4T0015	1,5	5	3,7	1,5
V900-4T0022	2,2	5,8	5	2,2
V900-4T0040	4	10	9	4
V900-4T0055	5,5	15	13	5,5
V900-4T0075	7,5	20	17	7,5
V900-4T0110	11	26	25	11
V900-4T0150	15	35	32	15
V900-4T0220	22	46	45	22
V900-4T0300	30	62	60	30
V900-4T0370	37	76	75	37
V900-4T0450	45	90	90	45
V900-4T0550	55	113	110	55
V900-4T0750	75	157	150	75
V900-4T0900	90	180	176	90
V900-4T1100	110	214	210	110
V900-4T1320	132	256	253	132
V900-4T1600	160	307	300	160
V900-4T1850	185	355	340	185



# Performance parameters of series V900

Model	Rated output power (kW)	Maximum input current (A)	Rated output current (A)	Recommended motor power (kW)
3PH / 3PH AC 400 V ±15%				
V900-4T2000	200	385	380	200
V900-4T2200	220	430	420	220
V900-4T2500	250	475	470	250
V900-4T2800	280	525	520	280
V900-4T3150	315	610	600	315
V900-4T3500	350	665	640	350
V900-4T4000	400	700	690	400
V900-4T4500	450	800	790	450
V900-4T5000	500	865	860	500

Model	Input voltage	Rated output power (kW)	Cross section of the voltage cable (mm <sup>2</sup> )	Recommended circuit breaker (A)	Recommended input contactor (A)
V900-2S0004	1 phase 1x230 V 50/60 Hz	0,4	0,75	10	9
V900-2S0007		0,75	0,75	16	12
V900-2S0015		1,5	1,5	25	18
V900-2S0022		2,2	2,5	32	25
V900-2S0030		3	2,5	40	32
V900-4T0007	3 phase 3x400 V	0,75	0,75	6	9
V900-4T0015		1,5	0,75	10	9
V900-4T0022		2,2	0,75	10	9
V900-4T0040		4	1,5	16	12
V900-4T0055		5,5	1,5	16	12
V900-4T0075		7,5	2,5	20	18
V900-4T0110		11	4	32	25
V900-4T0150		15	4	40	32





## Performance parameters of V900 series

Model	Input voltage	Rated output power (kW)	Cross section of the voltage cable (mm <sup>2</sup> )	Recommended circuit breaker (A)	Recommended input contactor (A)
V900-4T0185	3 phase 3x400 V	18,5	6	50	38
V900-4T0220		22	10	80	65
V900-4T0300		30	10	80	65
V900-4T0370		37	16	100	65
V900-4T0450		45	25	100	80
V900-4T0550		55	35	160	95
V900-4T0750		75	50	160	115
V900-4T0900		90	70	250	150
V900-4T1100		110	95	250	170
V900-4T1320		132	120	400	205
V900-4T1600		160	150	400	245
V900-4T1850		185	185	400	300
V900-4T2000		200	185	500	410
V900-4T2200		220	185	500	410
V900-4T2500		250	240	630	410
V900-4T2800		280	240	630	475
V900-4T3150		315	150*2	700	620
V900-4T3500		350	185*2	800	620
V900-4T4000		400	185*2	800	620
V900-4T4500		450	240*2	1000	800
V900-4T5000	500	240*2	1000	800	



# Table of suitable braking resistors of V900 series

Models 1 x 230 V			V900-2S.....	
Model	Power (kW)	Marking	Resistor power	Resistance value
V900-2S0004	0,4	80W-200R	80W	200
V900-2S0007	0,75	80W-150R	80W	150
V900-2S0015	1,5	100W-50R	100W	100
V900-2S0022	2,2	100W-70R	100W	70
V900-2S0030	3	250W-65R	250W	65
Models 3 x 400 V			V900-4T.....	
Model	Power (kW)	Marking	Resistor power	Resistance value
V9004T0007	0,75	250W-300R	250W	300
V900-4T0015	1,5	300W-220R	300W	220
V900-4T0022	2,2	400W-200R	400W	200
V900-4T0040	4	500W-130R	500W	130
V900-4T0055	5,5	500W-130R	500W	130
V900-4T0075	7,5	800W-90R	800W	90
V900-4T0110	11	1000W-65R	1000W	65
V900-4T0150	15	1500W-43R	1500W	43
V900-4T0185	18,5	2000W-32R	2000W	32
V900-4T0220	22	BRU-4KW-24R	4kW	24
V900-4T0300	30	BRU-4.5KW-24R	4,5kW	24
V900-4T0370	37	BRU-6KW-19.2R	6kW	19,2
V900-4T0450	45	BRU-7KW-14.8R	7kW	14,8
V900-4T0550	55	BRU-9KW-12.8R	9kW	12,8

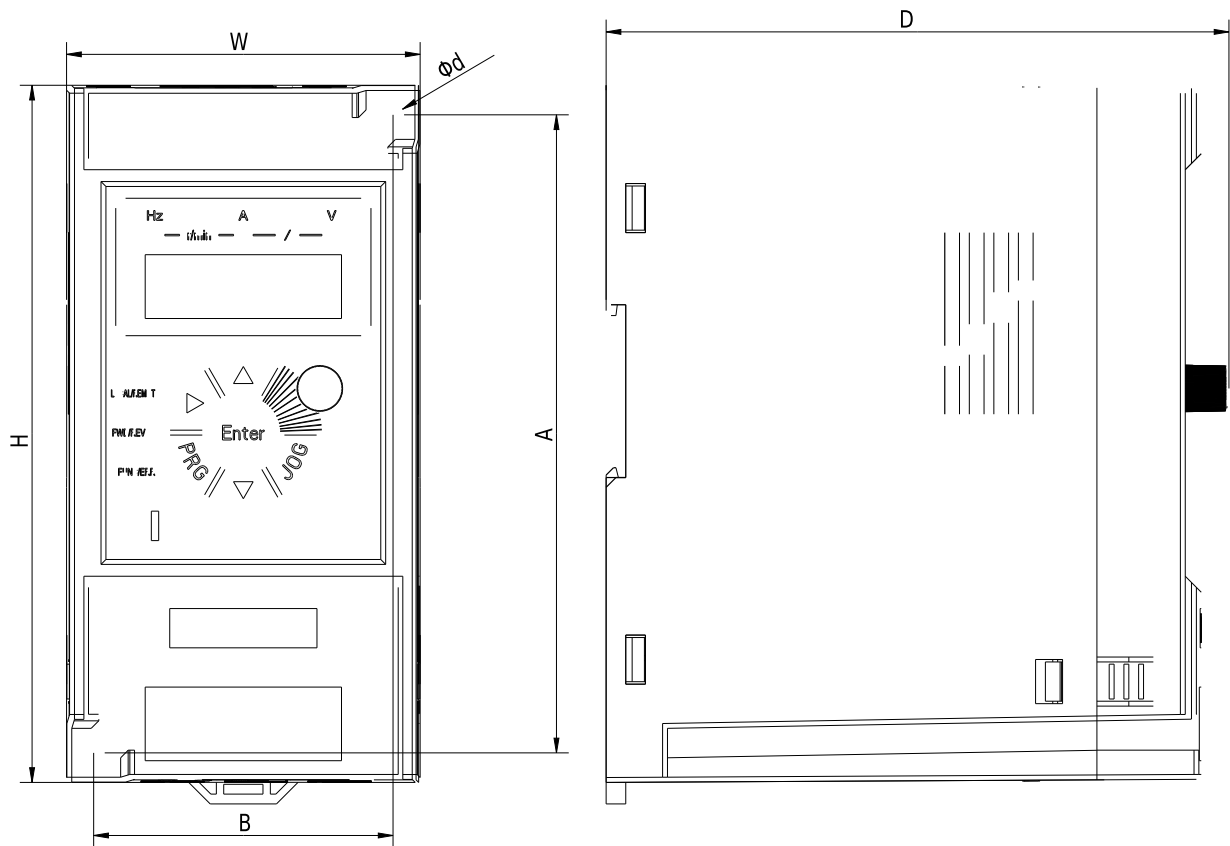


# Table of suitable braking resistors of V900 series

Models 3 x 400 V			V900-4T.....	
Model	Power (kW)	Marking	Resistor power (W)	Resistance value
V900-4T0750	75	BRU-11KW-9.6R	11kW	9,6
V900-4T0900	90	BRU-15KW-6.8R	15kW	6,8
V900-4T1100	110	BRU-9KW-9.3R*2	9kW*2	9,3*2
V900-4T1320	132	BRU-11KW-9.3R*2	11kW*2	9,3*2
V900-4T1600	160	BRU-13KW-6.2R*2	13kW*2	6,2*2
V900-4T1850	185	BRU-16KW-6.2R*2	16kW*2	6,2*2
V900-4T2000	200	BRU-19KW-2.5R*2	19kW*2	2,5*2
V900-4T2200	220	BRU-19KW-2.5R*2	19kW*2	2,5*2
V900-4T2500	250	BRU-21KW-2.5R*2	21kW*2	2,5*2
V900-4T2800	280	BRU-24KW-2.5R*2	24kW*2	2,5*2
V900-4T3150	315	HRU-27KW-2.5R*2	27kW*2	2,5*2
V900-4T3500	350	BRU-20KW-2.5R*3	20kW*3	2,5*3
V900-4T4000	400	BRU-23KW-2.5R*3	23kW*3	2,5*3
V900-4T4500	450	HRU-26KW-2.5R*3	26kW*3	2,5*3
V900-4T5000	500	HRU-29KW-2.5R*3	29kW*3	2,5*3



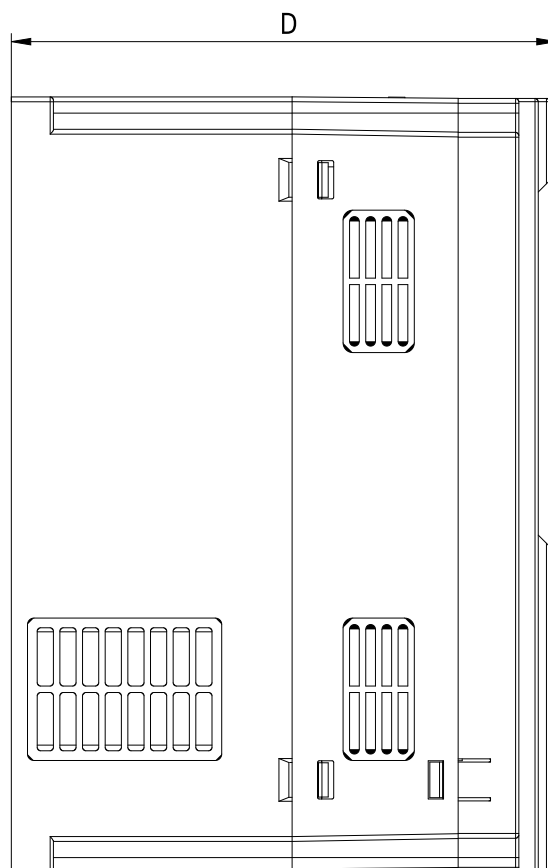
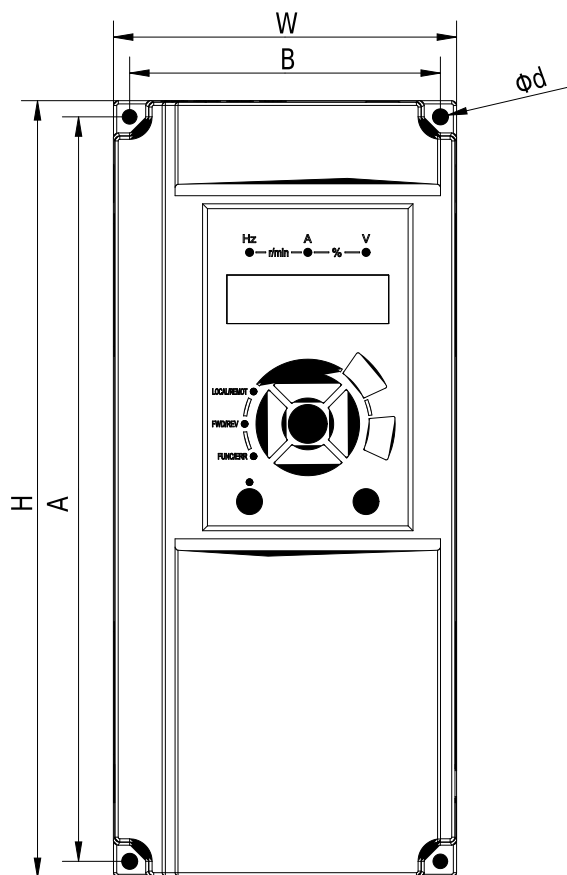
# Dimensions - size A



Size	Model	W	H	D	A	B	Ø d
A	V900-2S0004	72	142	127	130	61	4,5
	V900-2S0007						
	V900-2S0015						
	V900-4T0007						
	V900-4T0015						
	V900-4T0022						
A	V900-2S0022	85	180	131	167	72	5,5
	V900-2S0030						
	V900-4T0040						
	V900-4T0055						
	V900-4T0075						



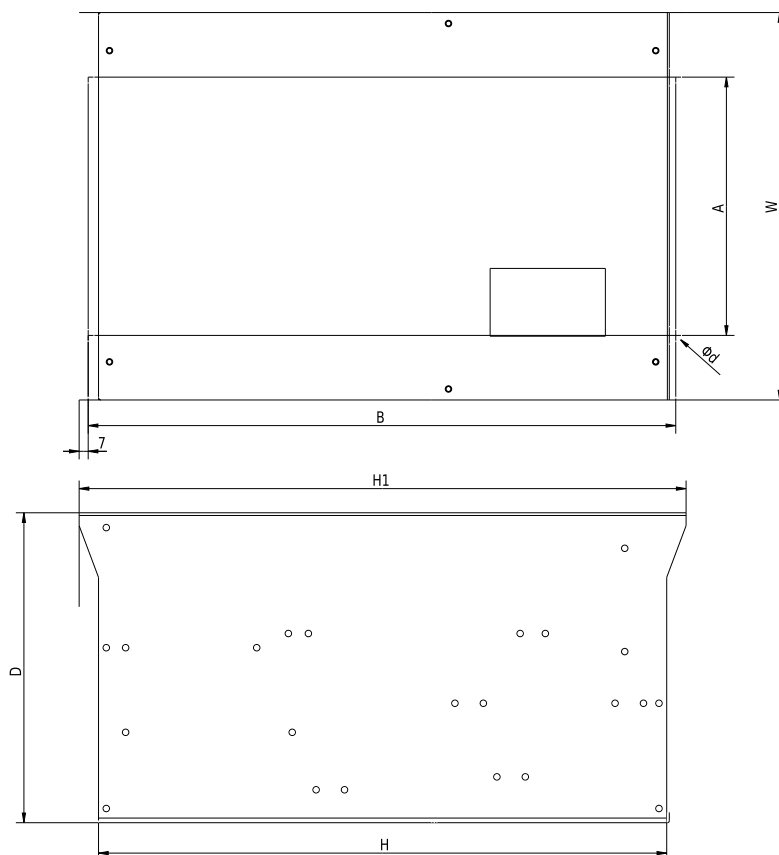
## Dimensions - size B



Size	Model	W	H	D	A	B	$\phi d$
B	V900-2S0055	106	240	168	230	96	4,5
	V900-2S0040						
	V900-4T0110						
	V900-4T0150						
B	V900-2S0022	151	332	183	318	137	7
	V900-2S0030						
	V900-4T0075						
B	V900-4T0370	217	400	216	385	202	7
	V900-4T0450						



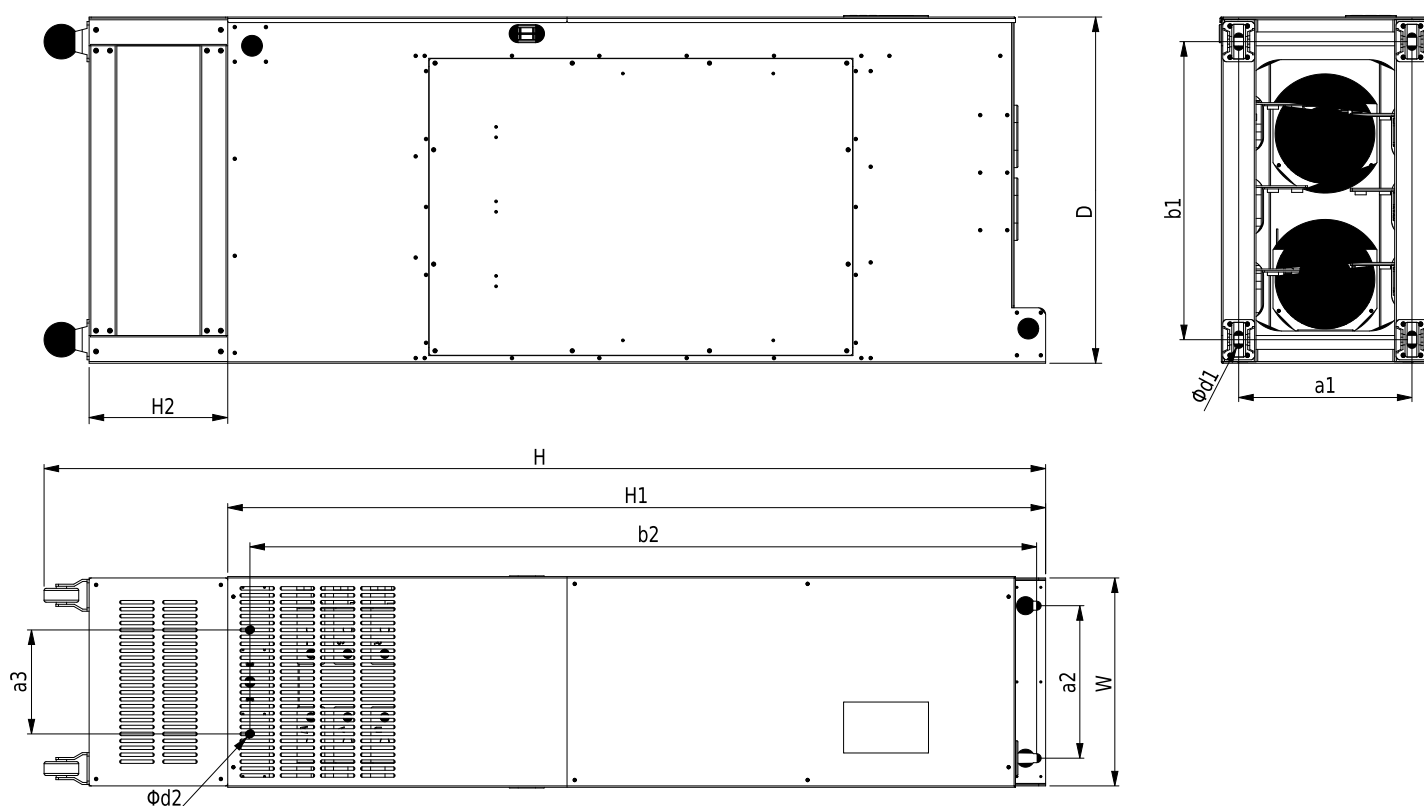
## Dimensions - size C



Size	Model	W	H	H1	D	A	B	Ø d
c	V900-4T0055	300	440	470	240	200	455	9
	V900-4T0750							
c	V9004T0900	275	590	630	310	200	612	9
	V900-4T1100							
	V900-4T1320							
c	V900-4T1600	400	675	715	310	320	695	11
	V900-4T1850							



## Dimensions - size D



Size	Model	Outline dimensions (mm)					Installation dimensions (mm)			Mounting on wall (mm)			
		W	H	H1	H2	D	a1	b1	d1	a2	a3	b2	d2
D	V900-4T2000	300	1445	1180	200	500	250	430	14	220	150	1135	13
	V900-4T2200												
	V900-4T2500												
D	V9004T2800	300	1445	1180	200	545	280	475	14	220	185	1275	13
D	V900-4T3150	325	1495	1230	200	545	275	470	14	225	185	1175	14
	V900-4T3500												
D	V900-4T4000	335	1720	1455	200	545	285	470	14	240	200	1380	14
	V900-4T4500												
	V900-4T5000												



## Table of main functions

Overloading in ND mode - Normal load (N. Duty)	120% / 60 s
Overloading in HD mode - Heavy load (H. Duty)	150% / 60 s
Control mode V/F scalar control	✓
Open-loop vector SFVC control mode	✓
Closed-loop vector CLVC control mode	✓
Analog inputs	2
Digital inputs	6
Analog outputs	2
Relay outputs	2
Open collector outputs	1
Brake transistor	✓
EMC filter	C1/C2
+10 V output	✓
+24 V output	✓
Input for PTC	✓
Safe Torque Off (STO)	✗
Emergency STOP (EMS)	✓
Integrated Ethernet	✗
Integrated MODBUS RTU	✓
PROFINET	✓
PG card for encoder	✓
PID + dry run detection LL + sleep mode SLP + high/low pressure detection HP/LP	✓
PLC intelligent function	✓
External panel connection (normally up to 30 m)	✓
Degree of protection IP 20	✓
Degree of protection IP 65	✗
Change of direction of rotation via external input	✓
Change of direction of rotation from the panel	✓





# Comparison of the main functions of VFDs

	A200	A550	V800	V810 ET	V810	V900	X550
Overloading in ND mode - Normal load (N. Duty)	150%/60 s	120%/60 s	120%/60 s	120%/60 s	120%/60 s	120%/60 s	150%/60 s
Overloading in HD mode - Heavy load (H. Duty)	✗	✗	150%/60 s	150%/60 s	150%/60 s	150%/60 s	✗
Control mode V/F scalar control	✓	✓	✓	✓	✓	✓	✓
Open-loop vector SFVC control mode	✗	✗	✓	✓	✓	✓	✗
Closed-loop vector CLVC control mode	✗	✗	✗	✗	✓	✓	✗
Analog inputs	1	1	2	✗	2	2	1
Digital inputs	5	4	6	2	8	6	6/4
Analog outputs	✗	✗	1	✗	1	2	✗
Relay outputs	✗	1	1	✗	2	2	2/1
Open collector outputs	1	✗	1	✗	1	1	✗
Brake transistor	✗	✗	✓	✓	✓	✓	✗
EMC filter	✓	✓	✓	✓	✓	✓	✓
+10 V output	✗	✓	✓	✗	✓	✓	✓
+24 V output	✗	✗	✗	✗	✓	✓	✓
Input for PTC	✗	✓	✓	✗	✓	✓	✓
Safe Torque Off (STO)	✗	✗	✗	✗	✗	✗	✗
Emergency STOP (EMS)	✓	✓	✓	✓	✓	✓	✓
Integrated Ethernet	✗	✗	✗	✓	✗	✗	✗
Integrated MODBUS RTU	✓	✓	✓	✓	✓	✓	✓
PROFINET	✗	✗	✗	✗	✗	✓	✗
PROFIBUS	✗	✗	✗	✗	✓	✗	✗
PG card for encoder	✗	✗	✗	✗	✓	✓	✗
PID + dry run detection LL+sleep mode +high/low pressure detection HP/LP	✓	✓	✓	✓	✓	✓	✓
PLC intelligent function	✗	✓	✓	✓	✓	✓	✓
External panel connection (normally up to 30m)	✓	✓	✓	✗	✓	✓	✓
Degree of protection IP20	✓	✓	✓	✓	✓	✓	✗
Degree of protection IP 65	✗	✗	✗	✗	✗	✗	✓
Change of direction of rotation via external input	✓	✓	✓	✓	✓	✓	✓
Change of direction of rotation from the panel	✓	✗	✗	✗	✓	✓	✗



# Accessories and modular constructions

## AC input choke

The AC input choke should be installed at the input terminal of the inverter and serves to prevent the transmission of harmonic interference generated by the inverter to the power grid, reduce the transmission of harmonic interference to other components from the grid, improve the quality of the power grid, increase power factors, and prevent abnormal voltage fluctuations in the power grid (if the imbalance is greater than 3%); inrush current in the electrical network, stabilization of the waveform and reduction of the influence on the converter.

## Input filter

The external EMC input filter between the inverter and the power source not only limits the interference of the inverter caused by the surrounding electromagnetic noise, but also prevents the interference of the surrounding devices by the inverter itself.

## DC choke

The DC choke is mainly used on the inverter and rectifier to increase the power factor and filter the interference of pulses, voltage, current and reduce the harmonic interference of the inverter.

## Filter on the output side

The task of this filter is to reduce interference generated by high switching frequencies, which are created by IGBT switching and are transmitted by wires. An EMI filter can be selected to limit the noise generated on the output side of the converter and the ground wire.



## AC output choke

The AC output choke is mounted on the output terminal of the inverter and serves to limit the discharge current of the connection cable between the inverter and the motor, the degree of accumulation of the PWM wave voltage of the passive inverter, increase the power factor and quality of the electrical network, and stabilize the waveform. When the line from the frequency converter to the motor is a long line (over 20 m), the choke will limit radio frequency interference and leakage current. The choke also reduces motor vibrations caused by inverter switching pulses. At the same time, the choke reduces the effect of wave reflection on the electrical line, especially with longer cable lengths.

## Suppression toroid (ferrite core)

This suppression element helps reduce the interference that is radiated from the conductors. It can be used both at the input and at the output of the frequency converter. It is most effective to wind at least three turns of the conductor around the ferrite core. To improve the effect, it is possible to use more toroids in one circuit.

## Braking resistance - Dynamic braking

The purpose of dynamic braking using braking resistors is to stop the spinning rotor of an electric motor with a load in a set (mostly very short) time. Connecting a braking resistor also improves the braking capabilities of the frequency converter to prevent overvoltage during deceleration.



# Comfortable and compact layout control of the drive in the switchboard

VYBO Electric KINESYSTEM 1 - typical cabinet designs



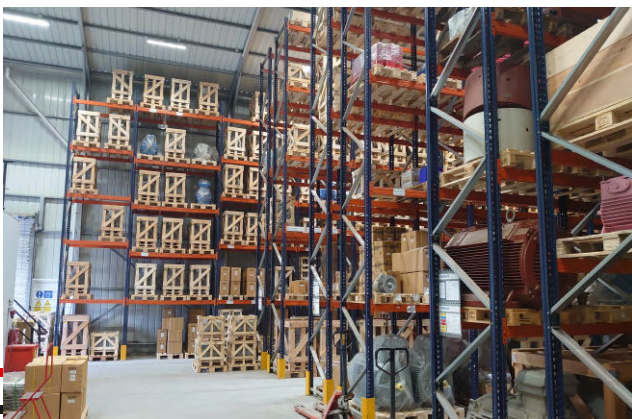
## Component interface to the switchboard

- chokes
- surge protection
- main contactor
- circuit breakers
- motor protection switch
- clamps



SOLUTIONS FOR INDUSTRY

# Warehouse stock



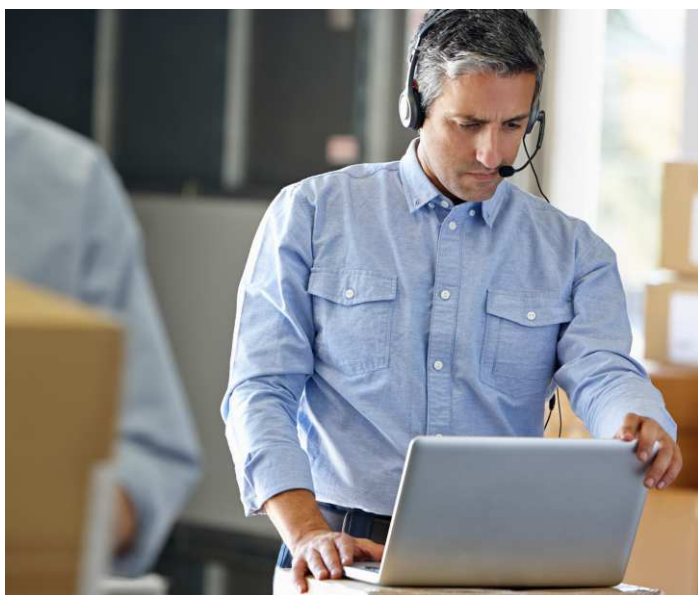
## We solve

- unit supply
- complete plant supply
- bulk supply for production
- any customer requirements included in our industry
- an online worker specializing in your company
- complete warranty and post-warranty service of LV and HV frequency converters VYBO Electric KineDrive
- call our line 24 hours a day, 365 days a year
- we provide all available documentation for our frequency converters and industrial drives



# Care of variable frequency drives, care of your business

If the inverter is part of the product you sell or is included in your production process, the priority is its problem-free and reliable operation. A wide range of lifetime services, it has been designed to meet all your expectations for every application.





## Installation and commissioning

The driver can be customized according to the exact requirements that follow from specific applications.



# Company

VYBO Electric is a hi-tech manufacturing plant and supplier of industrial electric motors. It is also dedicated to the research and development of frequency converters of its brand and further covers a wide range of products and products. The company is located in the European Union in the Slovak Republic in Spišská Nová Ves in the center of the eastern part of the country. We have extensive experience in the production of electric motors and in the design of electric drives, as well as many years of experience in the aforementioned research and development of frequency converters.



## More than 120 years of electrical industry in our region ...

The region has been known for its developed electrotechnical industry and also for the production of electric motors and electrotechnical equipment for more than 120 years. The Slovak Republic is still one of the leading producers of electrical and technical equipment.

**Maximum quality, maximum flexibility and super-fast delivery times...**





## Address

VYBO ELECTRIC a. s. | tel: +421 944 105 361  
Radlinského 18 | e-mail: mv@vyboelectric.eu  
052 01 Spišská Nová Ves  
Slovenská republika

[www.vyboelectric.com](http://www.vyboelectric.com)



SOLUTIONS FOR INDUSTRY



BUREAU VERITAS  
Certification



**VYBO Electric a.s.**  
Radlinského 18, 052 01 Spišská Nová Ves  
Slovak Republic

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

### ISO 14001: 2015

Scope of certification

**MANUFACTURE AND SALE OF ELECTRIC MOTORS, SALES AND DEVELOPMENT OF VARIABLE FREQUENCY DRIVES.**

Original cycle start date: 18.05.2022  
Expiry date of previous cycle: N/A  
Certification Audit date: 31.03.2022  
Certification cycle start date: 18.05.2022

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 17.05.2025

Certificate No. SK-U22 055E Version: 1 Issue date: 18.05.2022

Certification body address: 5<sup>th</sup> Floor, 86 Prescott Street, London E1 8HG, United Kingdom  
Local office: Plynárska 7/B, BRATISLAVA 821 09, Slovak Republic



Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation. To check this certificate validity please call: +421 2 2341 4165

Page 1 of 1



Bureau Veritas Certification

### Certificate

Awarded to

**VYBO Electric a.s.**  
Radlinského 18, 052 01 Spišská Nová Ves  
Slovak Republic

BUREAU VERITAS CERTIFICATION (Z) s.r.o. certifies that the Management System of the above organisation has been assessed and found to be in accordance with the requirements of the management system standard detailed below

Standard

### ISO 45001:2018

Scope of supply

**MANUFACTURE AND SALE OF ELECTRIC MOTORS, SALES AND DEVELOPMENT OF VARIABLE FREQUENCY DRIVES.**

Original Approval Date: 18-05-2022  
Expiry date of previous cycle: N/A  
Certification Cycle Start Date: 18-05-2022  
Certification Cycle End Date: 17-05-2025  
Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: 17-05-2025

To check this certificate validity please call: +420 210 090 215

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

Version 1 Issue Date: 18-05-2022  
Certificate Number: CZF - 2206117

ISSUING OFFICE ADDRESS: BUREAU VERITAS CERTIFICATION CZ, s.r.o., Obchodní 1, 143 02 Praha 4, Czech Republic

1/1

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT



# CERTIFICATE

**TÜV SÜD Slovakia s.r.o.**  
Certification Body for Management Systems  
Accredited by SNAS  
Certificate on accreditation No. Q-011  
certifies that



**VYBO Electric a.s.**  
Radlinského 18  
SK – 052 01 Spišská Nová Ves  
ICO: 45 537 143

has established and applies  
a Quality Management System for

**Manufacture and sale of electric motors.  
Sales and development of variable frequency drives.**

An audit was performed, Report No. 2264/40/22/Q/AS/C  
Proof has been furnished that the requirements  
according to

### STN EN ISO 9001:2016

are fulfilled. The certificate is valid from 2022-04-14 until 2025-04-13  
Certificate Registration No. Q 2264-1

Bratislava, 2022-04-14

TÜV SÜD Slovakia s.r.o.  
Certification Body for Management Systems  
Member of Group TÜV SÜD  
Jaskóva 6, 821 03 Bratislava

F-Q-019/26

Certificate SK22/3701

The management system of

**VYBO Electric a.s.**  
Radlinského 18  
052 01 Spišská Nová Ves, Slovakia

has been assessed and certified as meeting the requirements of

### EN ISO 50001:2018

For the following activities

**Production & sales of electric motors.  
Sales & development of variable frequency drives.**

Further clarifications regarding the scope of this certificate and the applicability of EN ISO 50001:2018 requirements may be obtained by consulting the organisation.

This certificate is valid from 7 April 2022 until 6 April 2025  
and remains valid subject to satisfactory surveillance audits.  
Recertification audit due a minimum of 60 days  
before the expiration date.  
Issue 1. Certified with SGS since 7 April 2022

Authorised by

Ing. Róbert Bodnár  
Director

SGS Slovakia spol. s r. o.  
Kýľucká 14, 040 11 Košice, Slovakia  
t +421 55 783 61 11, f +421 55 783 61 20, www.sgs.com

Page 1 of 1



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