



Variable frequency drives
Vector V800

Integrated vector system control

Information catalogue



SOLUTIONS FOR INDUSTRY

Variable frequency drives **Vector V800**



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 drives

Vector V800

- ▶ VECTOR SYSTEM CONTROL
- ▶ ADVANCED INTEGRATION OPTIMIZATION
- ▶ OPTIMIZED SIZE OF DEVICE



SOLUTIONS FOR INDUSTRY

Variable frequency drives

Vector **V800**

Frequency converters of the V800 series are compatible with vector control. They are produced in the highest possible quality with the most demanding functions, thanks to which they are able to control drives at a professional level. They have special software and many functions that allow them to operate even in the harshest conditions of heavy industry. V800 inverters are fully pre-programmed and ready for immediate use. All you have to do is plug them into the mains. They can be controlled directly from the panel or externally analog and digital.



Variable frequency drive **V800**

FUNCTIONS

- Supplying the frequency converter with single-phase voltage 1 x 230 V or three-phase voltage 3 x 400 V
- Range of output frequency 0.01 to 3200 Hz
- Torque boost function of the electric motor by up to 30%
- V800 is suitable for controlling asynchronous and synchronous motors
- Standard built-in brake unit
- Physical interface RS 485 serial built in
- MODBUS RTU communication interface
- EMS safety function for immediate stopping
- Function for connecting PTC protection or motor thermal contact
- Built-in port for external placement control panel using a cable
- Built-in PID, PLC, AVR
- 6 digital inputs, 2 analog inputs are integrated inputs 0-10 V and 4-20 mA



SOLUTIONS FOR **INDUSTRY**

Most often, V800 is used to control fan drives, pumps, centrifuges, gearboxes, to drive machines in the textile, ceramic, food industry, etc.

Use in industry

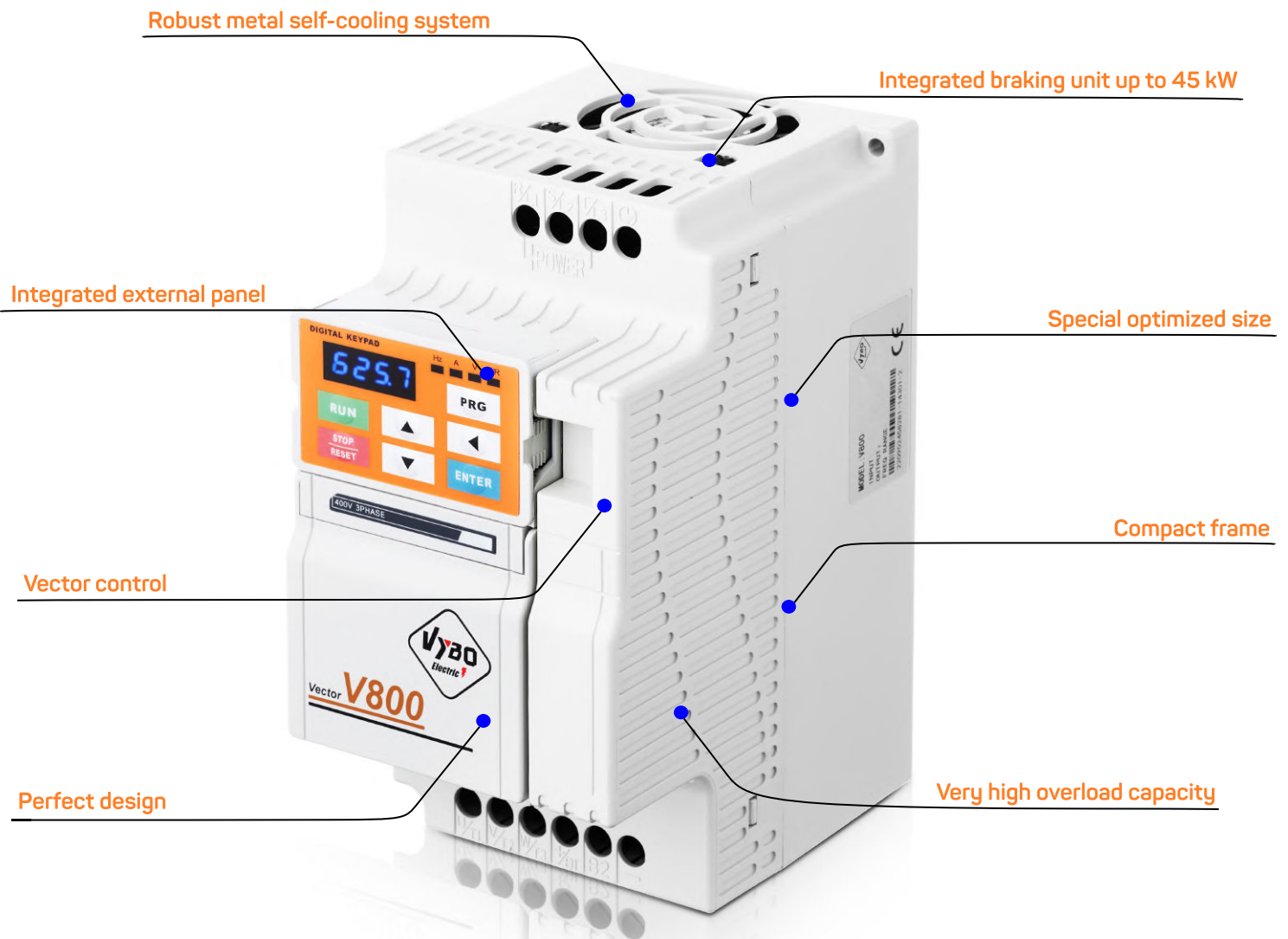


FUNCTIONS

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



Variable frequency drives **Vector V800**



General technical parameters for all types of V800

Control mode	V/F scalar control SFVC vector control with open circuit
Maximum frequency	SFVC vector control: 0 - 320 Hz V/F scalar control: 0 - 3200 Hz
Carrier frequency	1 - 16 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/100%
Speed range	1:100 (SFVC)
Speed stability	± 0.5% (SFVC)
Torque control accuracy	± 5% (SFVC)
Overload size	G type: 60s for 150% rated current, 3s for 180% rated current P type: 60s for 120% rated current, 3s for 150% rated current
Torque increase	Fixed torque increase User increase 0.1%-30.0%
EMC filter	Integrated with label "C1" of C1 class. Without C2 class label.
V/F curve	Lines V/F curve Multipoint V/F curve N-voltage V/F curve (multiple of 1.2 voltage, 1.4-voltage, 1.6- voltage, 1.8 voltage, adjusted)
V/F separation	Two types: full separation, half separation
Ramp modes	Linear curve S-curve type ramp Four groups of acceleration/deceleration times with a range of 0.0-6500.0s
DC braking	Braking frequency: 0.3 Hz to maximum frequency Braking time: 0.0-100.0 s Braking current value: 0.0% -100.0%



General technical parameters for all types of V800

Control in JOG mode (stepping)	JOG frequency range: 0.00-50.00 Hz JOG acceleration/ deceleration time 0.0-6500.0 s
Implemented more preset speeds	Implemented up to 16 speeds using a simple PLC function or a combination of X end states.
Built-in PID regulator	Facilitates a process-controlled closed-loop control system.
Automatic AVR voltage regulation	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.
Torque Limiting and Control	It can automatically limit torque and prevent frequent overcurrent changes during operation.
EMS STOP emergency feature	"Emergency Stop" system: stops the drive immediately in an emergency, after activating EMS STOP.
Fast current limit	Helps prevent common errors due to AC motor overcurrent
High performance	AC motor control is performed by high-performance vector current control technology.
Time management	Time range: 0.0-6500 minutes
Communication protocol	RS485 MODBUS RTU
Boot command channel	Depending on the panel, control terminals, the serial communication port can be switched in many ways
Frequency source	10 types of frequencies, given by digital analog voltage, analog current, pulse, serial port, can be switched in many ways
Auxiliary frequency source	10 kinds of frequencies, micro adjustment can be easily implemented, frequency synthesizer
Input terminals	6 digital inputs 2 analog inputs, one of which only supports 0-10V input and the other supports 0-10V or 4-20mA input.
Output terminals	1 digital output, 1 relay output, 1 analog output terminal with 0-20 mA / 0-10 V output

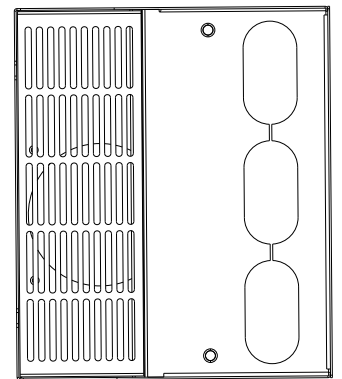
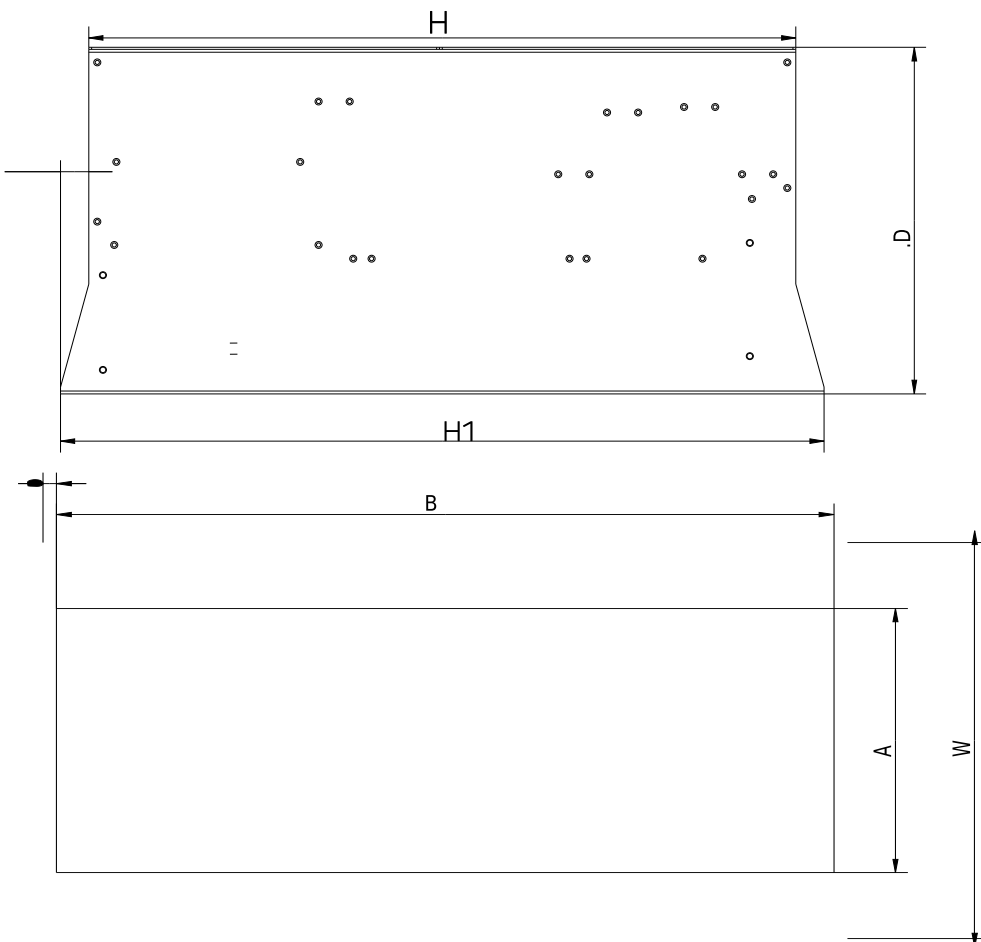
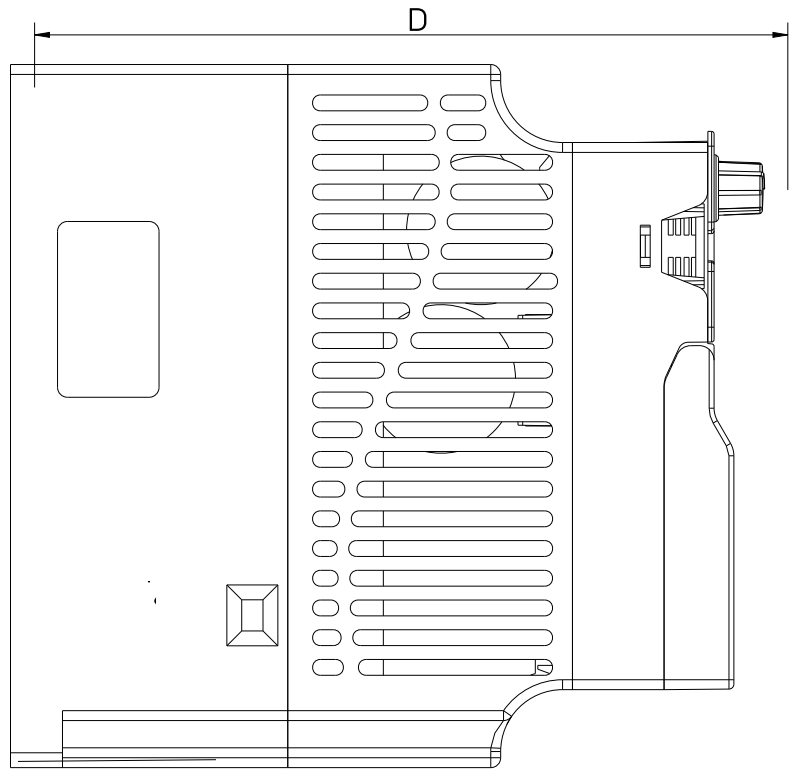
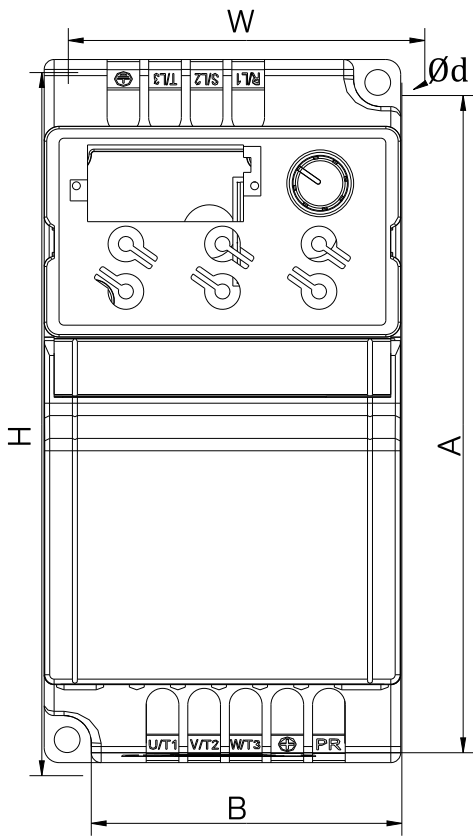


General technical parameters for all types of V800

PTC	Input for PTC protection of the electric motor
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, output phase loss protection, overcurrent protection, overvoltage protection, live protection, overheat protection and overload protection.
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
Installing in an environment	Inside, 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 3S3 EN/IEC 60721-3-3.
Altitude	Under 1000 meters above sea level (reduce the degree of load when used above 1000 meters above sea level.)
Ambient temperature	-10 °C ~ 40 °C (reduce power level if ambient temperature is between 40 °C and 50 °C)
Humidity	Less than 95% relative humidity, no condensation IEC 60068-2-3
Vibration	Less than 5,9 m/s ² (0,6g) IEC 60068-2-6
Storage temperature	- 20 °C to + 60°C



Dimensions



Dimensional data

Model	W	H	H1	D	A	B	Ø d
V800-2S0004 and V800-2S0015	72	142	-	152	62,7	132,7	5
V800-2S0022 and V800-2S0040	100	183	-	143	90	173	5
V800-2S0055 and V800-2S0075	130	260	-	184	120	250	5
V800-4T0004 and V800-4T0022	72	142	-	152	62,7	132,7	5
V800-4T0040 and V800-4T0075	100	183	-	143	90	173	5
V800-4T0110 and V800-4T0150	130	260	-	184	120	250	5
V800-4T0185 and V800-4T0300	195	280	-	179	182,5	266	7
V800-4T0370 and V800-4T0450	245	390	425	193	180	410	7
V800-4T0550 and V800-4T0750	300	500	540	252	200	522	9
V800-4T0900	338	546	576	256,5	270	560	9
V800-4T1100 and V800-4T1320	338	550	580	300	270	564	9
V800-4T1600 and V800-4T2000	400	675	715	310	320	695	11



Performance parameters of V800 series

Type of VFD V800	Rated output power (kW)	Maximal input current (A)	Rated output current (A)	Recommended motor power (kW)
1PH / 3PH AC 230 V ±15%				
V800-2S0004	0,4	5,4	2,4	0,4
V800-2S0007	0,75	7,2	4,5	0,75
V800-2S0015	1,5	10	7	1,5
V800-2S0022	2,2	16	10	2,2
V800-2S0030	3	23	16	3
3PH / 3PH AC 400 V ±15%				
V800-4T0007	0,75	3,8	2,5	0,75
V800-4T0015	1,5	5	3,7	1,5
V800-4T0022	2,2	5,8	5	2,2
V800-4T0040	4	10	9	4
V800-4T0055	5,5	15	13	5,5
V800-4T0075	7,5	19	17,5	7,5
V800-4T0110	11	26	25	11
V800-4T0150	15	35	32	15
V800-4T0220	22	46	45	22
V800-4T0300	30	62	60	30
V800-4T0370	37	76	75	37
V800-4T0370	37	76	75	37
V800-4T0450	45	92	90	45
V800-4T0550	55	112	110	55
V800-4T0750	75	155	150	55
V800-4T0900	90	180	176	90
V800-4T1100	110	215	210	110
V800-4T1320	132	260	253	132
V800-4T1600	160	310	300	160
V800-4T1850	185	350	340	185
V800-4T2000	200	390	380	200



Type of VFD V800	Input voltage (V) 50/60Hz	Power (kW)	Recommended cable cross-section (mm ²)	Recommended circuit breaker (A)	Recommended input contactor (A)
V800-2S0004	1 phase 1x230 V	0,4	1,5	10	10
V800-2S0007		0,75	1,5	16	16
V800-2S0015		1,5	2,5	25	25
V800-2S0022		2,2	4	32	32
V800-2S0030		3	4	40	40
V800-4T0004		3 phase 3x400 V	0,4	1,5	6
V800-4T0007	0,75		1,5	6	6
V800-4T0015	1,5		1,5	6	6
V800-4T0022	2,2		1,5	10	10
V800-4T0040	4		2,5	16	16
V800-4T0055	5,5		2,5	20	20
V800-4T0075	7,5		4	32	32
V800-4T0110	11		4	32	32
V800-4T0150	15		6	40	40
V800-4T0185	18,5		10	50	50
V800-4T0220	22		10	50	50
V800-4T0300	30		16	63	63
V800-4T0370	37		25	100	100
V800-4T0450	45		25	100	100
V800-4T0550	55		35	125	125
V800-4T0750	75		50	160	160
V800-4T0900	90		70	225	225
V800-4T1100	110		95	250	250
V800-4T1320	132		120	315	315
V800-4T1600	160		120	350	350
V800-4T1850	185		150	400	400
V800-4T2000	200		185	500	500



Table of suitable braking resistors of V800

Type of VFD	Braking resistance		Braking unit	Recommended power (kW)
	Resistor power (kW)	Resistance value (Ω) (\geq)		
V800-2S0004	0,8	200	Integrated	0,4
V800-2S0007	0,8	150	Integrated	0,75
V800-2S0015	0,1	70	Integrated	1,5
V800-2S0022	0,1	70	Integrated	2,2
V800-2S0030	0,25	65	Integrated	3
V800-4T0004	0,15	300	Integrated	0,4
V800-4T0007	0,15	300	Integrated	0,75
V800-4T0015	0,15	220	Integrated	1,5
V800-4T0022	0,25	200	Integrated	2,2
V800-4T0040	0,3	130	Integrated	4
V800-4T0055	0,4	90	Integrated	5,5
V800-4T0075	0,5	65	Integrated	7,5
V800-4T0110	0,5	65	Integrated	11
V800-4T0150	0,8	43	Integrated	15
V800-4T0185	1	32	Integrated	18,5
V800-4T0220	1,3	25	Integrated	22
V800-4T0300	1,5	22	Integrated	30
V800-4T0370	2,5	16	Integrated	37
V800-4T0450	3,7	12,6	Integrated	45
V800-4T0550	4,5	9,4	External BU	55
V800-4T0750	5,5	9,4	External BU	75
V800-4T0900	7,5	6,3	External BU	90
V800-4T1100	4,5 x 2	9,4 x 2	External BU	110
V800-4T1320	5,5 x 2	9,4 x 2	External BU	132
V800-4T1600	6,5 x 2	6,3 x 2	External BU	160
V800-4T1850	16	2,5	External BU	185
V800-4T2000	6,5 x 3	6,3 x 3	External BU	200



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	1
Relay outputs	1
Open collector outputs	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	✓
PROFIBUS	✗
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

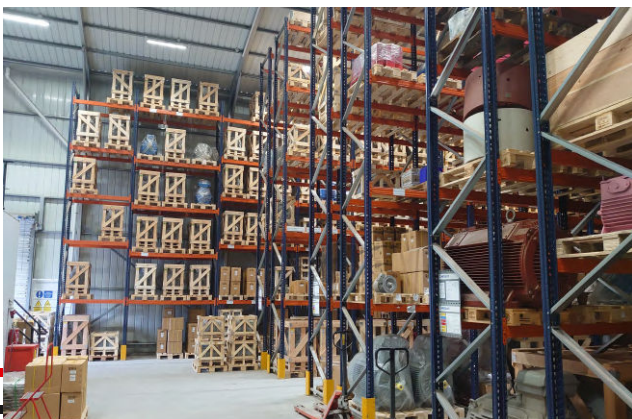
The purpose of dynamic braking using braking resistors is to stop the spinning rotor of an electric motor with a load in a set (mostly very short) time. Connecting a braking resistor also improves the braking capabilities of the frequency converter to prevent overvoltage during deceleration.





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 inverters, 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.



SOLUTIONS FOR INDUSTRY



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...





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Slovenská republika

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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: 5th 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

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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.
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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
Jaskovka 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

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