Datasheet

Variable frequency drive VYBO Electric a.s.

Type: V800-4T1600



V800 series 400V



51	
Rated power at normal load (Normal duty)	160 kW
Rated power for heavy load, heavy starts (Heavy duty)	132 kW
Rated output current	300 A
Supply voltage	3 x 400 V
Output voltage	0 – 400 V
Output frequency	0 – 3200 Hz
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	 Image: A set of the set of the
+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 inteligent function	
External panel connection (normally up to 50 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	×

Detailed specification

Type of VFD V800	Rated output power (kW)	Maximum input current (A)	Rated output current (A)	Recommended motor power (kW)
V 800-4T1600	160	310	300	160

Input voltage (V)	Power	Cross section of the voltage	Recommended circuit breaker (A)
50/60Hz	(kW)	cable (mm²)	
3 PH 3 x 400 V	160	120	350

Table of suitable braking resistors

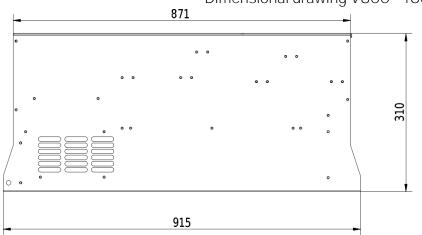
		Braking resistance		
Type of VFD	Resistor power (kW)	Resistance value (Ω) (≥)	Braking unit	Recommended power (kW)
V 800-4T1600	6,5 x 2	6,3 x 2	External	160

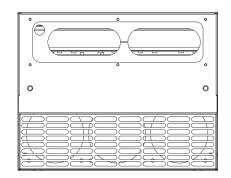
General technical parameters for all types of V800

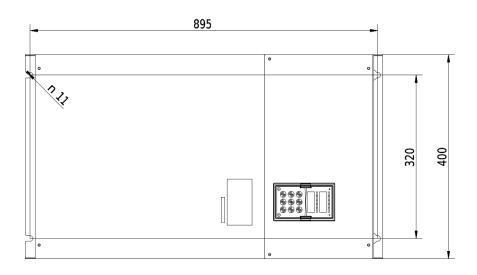
Control mode	V/F scalar control
	SFVC vector control with open circuit
Maximum frequency	SFVC vector control: 0 - 320 Hz
	V/F scalar control: 0 - 3200 Hz
Carrier frequency	1 - 16 kHz
	The carrier frequency is automatically set
	based on the load characteristic.
Input frequency resolution	Digital setting 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)

	G type: 60s for 150% rated current, 3s for 180%
Overload size	rated current
	P type: 60s for 120% rated current, 3s for 150%
	rated current
Torque increace	Fixed torque increase
Torque increase	User increase 0.1%-30.0%
EMC filter	Integrated with label "C1" of C1 class.
EIVIC TIILEI	Without C2 class label.
	Lines V/F curve
	Multipoint V/F curve
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
	Linear curve
Ramp modes	S-curve type ramp
	Four groups of acceleration/deceleration times with a range of 0.0-6500.0
	Braking frequency: 0.3 Hz to maximum frequency
DC braking	Braking time: 0.0-100.0 s
	Braking current value: 0.0% -100.0%
Control in JOG mode	JOG frequency range: 0.00-50.00 Hz
(stepping)	JOG acceleration/ deceleration time 0.0-6500.0 s
Implemented more preset	Implemented up to 16 speeds using a simple
speeds	PLC function or a combination of X end states.
Built-in PID regulator	Facilitates a process-controlled closed-loop control system.
Automatic AVR	It can automatically maintain a constant output voltage
voltage regulation	when the supply voltage changes.
Overvoltage and overcurrent	Current and voltage are automatically limited during operation to prevent
control	frequent tripping due to overvoltage and overcurrent.
Tenning I to 111 - 100 - 1 - 1	It can automatically limit torque and prevent frequent
Torque Limiting and Control	overcurrent changes during operation.
EMS STOP	"Emergency Stop" system: stops the drive immediately
emergency feature	in an emergency, after activating EMS STOP.
Fast current limit	Helps prevent common errors due to AC motor overcurrent
	AC motor control is performed by high-performance
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
	10 kinds of frequencies, micro adjustment can
Auxiliary frequency source	be easily implemented, frequency synthesizer
	6 digital inputs
Input terminals	2 analog inputs, one of which only supports 0-10V input
	and the other supports 0-10V or 4-20mA input.
	1 digital output,
Output terminals	1 relay output,
	1 analog output terminal with 0-20 mA / 0-10 V output
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
	EN/IEC 61800-3:2017; C1, which is suitable for the 1st environment
Standards	EN/IEC 61800-3:2017; C2, which is suitable for the 1st environment
	Inside, avoid direct sunlight, salt, dust, corrosive or flammable gas, smoke,
Installing in an environment	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/s2 (0,6g) IEC 60068-2-6
Storage temperature	- 20 °C to + 60°C







Dimensional drawing V800 - 160kW 4T1600