Datasheet
Variable frequency drive VYBO Electric a.s.
Type: V800-4T1850

V800 series 400V

Rated power at normal load (Normal duty)	185 kW
Rated power for heavy load, heavy starts (Heavy duty)	160 kW
Rated output current	340 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	✓
+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 800-4T1850	185	350	340	185

Input voltage (V) 50/60Hz	Power (kW)	Cross section of the voltage cable (mm^2)	Recommended circuit breaker (A)
3 PH 3 x 400 V	185	150	400

Table of suitable braking resistors

Type of VFD	Braking resistance		Braking unit	Recommended power (kW)
	Resistor power (kW)	Resistance value (Ω) (≥)		
V 800-4T1850	16	2,5	External	185

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 0.0-6500.0
DC braking	Braking frequency: 0.3 Hz to maximum frequency Braking time: 0.0-100.0 s Braking current value: 0.0% -100.0%
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
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/s2 (0,6g) IEC 60068-2-6
Storage temperature	- 20 °C to + 60°C

Dimensional drawing V800 - 185kW 4T1850