

Datasheet

Variable frequency drive VYBO Electric a.s.

Type: V800-4T0185



V800 series 400V



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|---|-------------|
| Rated power at normal load (Normal duty) | 18,5 kW |
| Rated power for heavy load, heavy starts (Heavy duty) | 15 kW |
| Rated output current | 37 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 intelligent 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 800-4T0185 | 18,5 | 38 | 37 | 18,5 |

| 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 | 18,5 | 10 | 50 |

Table of suitable braking resistors

| Type of VFD | Braking resistance | | Braking unit | Recommended power (kW) |
|--------------|---------------------|--|--------------|------------------------|
| | Resistor power (kW) | Resistance value (Ω) (\geq) | | |
| V 800-4T0185 | 1 | 32 | Integrated | 18,5 |

General technical parameters for all types of V800

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| 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 | \pm 0.5% (SFVC) |
| Torque control accuracy | \pm 5% (SFVC) |

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| 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. |

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| 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/s ² (0,6g) IEC 60068-2-6 |
| Storage temperature | - 20 °C to + 60°C |

Dimensional drawing V800 - 18,5kW 4T0185

