

Datasheet

Variable frequency drive VYBO Electric a.s.

Type: V810-4T0075



V810 series 400V



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| Rated power | 7,5 kW |
| Rated output current | 17 A |
| Supply voltage | 3 x 400 V |
| Output voltage | 0 – 400 V |
| Output frequency | 0 – 3200 Hz |
| Overload capacity 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 | 8 |
| Analog outputs | 2 |
| Relay outputs | 2 |
| 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 | ✓ |
| 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 | ✓ |

Detailed specification

| VFD model type V810 | Rated output power (kW) | Maximum input current (A) | Rated output current (A) | Recommended motor power (kW) |
|---------------------|-------------------------|---------------------------|--------------------------|------------------------------|
| V 810-4T0075 | 7,5 | 20 | 17 | 7,5 |

| Input voltage (V) 50/60Hz | Power (kW) | Cross section of the voltage cable (mm ²) | Recommended circuit breaker (A) |
|------------------------------|------------|---|---------------------------------|
| 3 PH 3x400 V | 7,5 | 4 | 32 |

Table of suitable braking resistors

| Type of VFD | Braking resistance | | Braking unit CDBR | Braking moment (10% ED) | Recommended power (kW) |
|--------------|--------------------|--|-------------------|-------------------------|------------------------|
| | Resistor power (W) | Resistance value (Ω) (\geq) | | | |
| V 810-4T0075 | 400 | 90 | Built-in | 125 | 7,5 |

General technical parameters for all types of V810

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| Power supply | Input voltage range: <ul style="list-style-type: none"> 1 x 230 V AC \pm 15% 3 x 400 V AC \pm 15% 3 x 690 V AC \pm 15% Power frequency range: 47 to 63 Hz |
| Control mode | V/F scalar control SFVC vector with open circuit CLVC vector control |
| Maximum frequency | SFVC, CLVC 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% |

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| 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 (SFVC) 1:1000 (CLVC) |
| Speed stability | ± 0.5% (SFVC) ± 0.02% (CLVC) |
| Torque control accuracy | ± 5% (CLVC) |
| Overloadability | G type: 60s for 150% of rated current, 3s for 180% of rated current. P type: 60s for 120% of rated current, 3s for 150% of rated current. |
| Increase torque | Auto-boost or user manual increment 0.1% to 30.0% |
| V/F curve | Linear 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 ramp S-curve ramp 4 groups of acceleration / deceleration times with a range of 0.0-6500.0 s |
| Input terminals | 8 digital inputs, binary ON / OFF inputs, 1 terminal X5 can support high speed pulse input. All terminals have optional PNP or NPN 2 analog inputs, one of which FIV supports -10 V / +10 V; or a 0-10 V input and the second FIC supports a 0-10V or 0-20mA (4-20 mA) input. |
| Output terminals | 1 Programmable open collector output: provides 1 output terminal (open collector output or high speed pulse output) 2 relay outputs, 2 analog outputs: FOV and FOC with optional 0 – 20 mA (4 – 20 mA) or 0 – 10 V output |
| PG cards | The drive is equipped with a port for PG cards (for encoder), or PG cards for use with a resolver, etc. |

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| DC braking | Braking frequency: 0.0 Hz to maximum frequency Braking time: 0.0-36.0 s Braking current value: 0.0% -100.0% |
| Brake unit | Models up to 18.5 kW have a built-in brake unit as standard. |
| Control in JOG mode (stepping) | JOG frequency range: 0.00-50.00 Hz JOG acceleration / deceleration time: 0.0-6500.0 s |
| Implem. more preset speeds | Implemented up to 16 speeds using a simple PLC function or a combination of X end states. |
| PTC | Input for PTC motor or thermal contact protection. |
| 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 and steering limitation | It can automatically limit torque and prevent frequent overcurrent changes during operation. |
| EMS STOP security feature | Emergency stop system: in an emergency, the drive stops immediately 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: 0.0-6500.0 minutes |
| Communication | MODBUS RTU, PROFIBUS-DP (from 5,5 kW) |
| 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, X8, PID, can be switched in many ways |
| Auxiliary frequency source | 10 kinds of frequencies, micro adjustment can be easily implemented, frequency synthesizer |
| 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. |

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| 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 | 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 meters above sea level. (reduce the power level when used above 1000 meters above sea level.) |
| Ambient temperature | - 10 ° C to 40 ° C (reduce power level if ambient temperature is between 40 ° C to 50 ° C) |
| Humidity | Less than 95% relative humidity, no condensation IEC 60068-2-3 |
| Vibration | Less than 5.9 m / s ² (0.6 g) IEC 60068-2-6 |
| Storage temperature | - 20 ° C to + 60 ° C |

Dimensional drawing V810 - 7,5kW 4T0075

