

GD20 Series

UL Certified VFD



Goodrive20-EU



Goodrive20-EU is a general purpose vector control VFD with certified STO(Safe torque Off) function. It's oriented for OEM equipment markets, mainly covering the applications of water treatment, printing and packaging, paper machinery, shearing, plastic, etc.

Features

- V/F(SVPWM) and Sensorless Vector Control (SVC).
- External keypad for parameter copy.
- Common DC bus solution (460V; $\geq 4\text{kW}$).
- Starting torque up to 0.5Hz/150%.
- Standard built-in braking unit.
- Standard C3 filter ($\geq 4\text{kW}$), optional C3 filter ($\leq 2.2\text{kW}$) and C2 filter.

Goodrive20-UL



Goodrive20-UL series mini type general vector VFD, positioned as using the high performance product for small power market. It uses the leading international vector control algorithm, with excellent product features, compatible with wall and rail installation, and product volume is smaller.

Features

- Mini structure for smaller installation space and parallel/side-by-side installation.
- Advanced PID functions.
- Various installation modes.
- Embedded braking transistors.
- Removable cooling fan for easy maintenance.
- Continuous running in instant power loss.

Type Selection (GD20-EU)

GD20 – 011G - 4 - EU

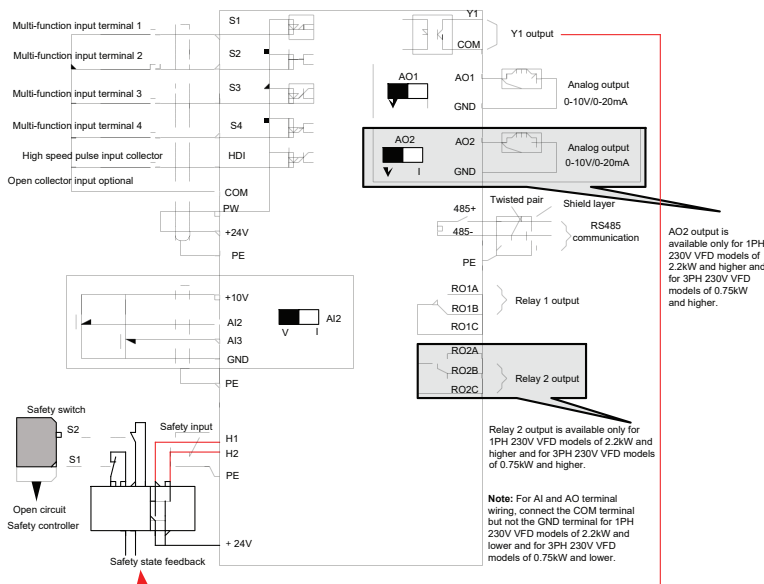
① ② ③ ④

| Key | No. | Detailed description | Detailed content |
|------------------------|-----|----------------------|--|
| Abbreviation | ① | Product abbreviation | GD20-EU is short for Goodrive20-EU |
| Rated power | ② | Power range | 011: 11kW G: constant torque load |
| Voltage degree | ③ | Voltage degree | S2: AC 1PH 220V(-15%)~240V(+10%) 2: AC 3PH 220V(-15%)~240V(+10%) 4: AC 3PH 380V(-15%)~440V(+10%) |
| Additional information | ④ | Special function | EU: Built-In safe torque off function |

Power Ratings (GD20-EU)

| Model | Output power | | Rated input current (A) | Rated output current (A) | Dimensions W*H*D (mm) | Gross weight (lbs) | STO function |
|------------------------------|--------------|------|-------------------------|--------------------------|-----------------------|--------------------|-------------------------|
| | (kW) | (HP) | | | | | |
| AC 1PH 220V(-15%)~240V(+10%) | | | | | | | |
| GD20-0R4G-S2-EU | 0.4 | 0.5 | 6.5 | 2.5 | 80*160*123.5 | 2.9 | Class SIL2 PLd CAT.3 |
| GD20-0R7G-S2-EU | 0.75 | 1 | 9.3 | 4.2 | | | |
| GD20-1R5G-S2-EU | 1.5 | 2 | 15.7 | 7.5 | 80*185*140.5 | 3.5 | |
| GD20-2R2G-S2-EU | 2.2 | 3 | 24 | 10 | | | |
| AC 3PH 220V(-15%)~240V(+10%) | | | | | | | |
| GD20-0R4G-2-EU | 0.4 | 0.5 | 3.7 | 2.5 | 80*185*140.5 | 3.1 | Class SIL2 PLd CAT.3 |
| GD20-0R7G-2-EU | 0.75 | 1 | 5 | 4.2 | | | |
| GD20-1R5G-2-EU | 1.5 | 2 | 7.7 | 7.5 | 146*256*167 | 8.6 | Class SIL3 PLe CAT.3 |
| GD20-2R2G-2-EU | 2.2 | 3 | 11 | 10 | | | |
| AC 3PH 380V(-15%)~440V(+10%) | | | | | | | |
| GD20-0R7G-4-EU | 0.75 | 1 | 3.4 | 2.5 | 80*185*140.5 | 3.1 | Class SIL2 PLd CAT.3 |
| GD20-1R5G-4-EU | 1.5 | 2 | 5.0 | 4.2 | | | |
| GD20-2R2G-4-EU | 2.2 | 3 | 5.8 | 5.5 | 146*156*167 | 8.6 | Class SIL3 PLe CAT.3 |
| GD20-004G-4-EU | 4 | 5 | 13.5 | 9.5 | | | |
| GD20-5R5G-4-EU | 5.5 | 7.5 | 19.5 | 14 | 170*320*196.3 | 14.4 | |
| GD20-7R5G-4-EU | 7.5 | 10 | 25 | 18.5 | | | |
| GD20-011G-4-EU | 11 | 15 | 32 | 25 | | | |

Control Circuit Wiring Diagram



| Terminal | Quantity | Description |
|------------------------|--------------------|--------------------------------|
| Digital input | 4 (S1-S4) | 1kHz, NPN, PNP |
| High speed pulse input | 1 (HDI) | 50kHz, NPN, PNP |
| Analog input | 2 (AI2-AI3) | 0~10V, 0~20mA, -10V~+10V |
| ON-OFF output | 1 (Y1) | Maximum output frequency: 1kHz |
| Analog output | 2 (AO) | 0~10V, 0~20mA |
| Relay output | 2 (RO1-RO2) | 3A/250VAC, NO+NC |
| STO function | 4(H1~H2, PE, +24V) | Safety input Power input |

Type Selection (GD20-UL)

GD20 – 2R2G – 4 – UL

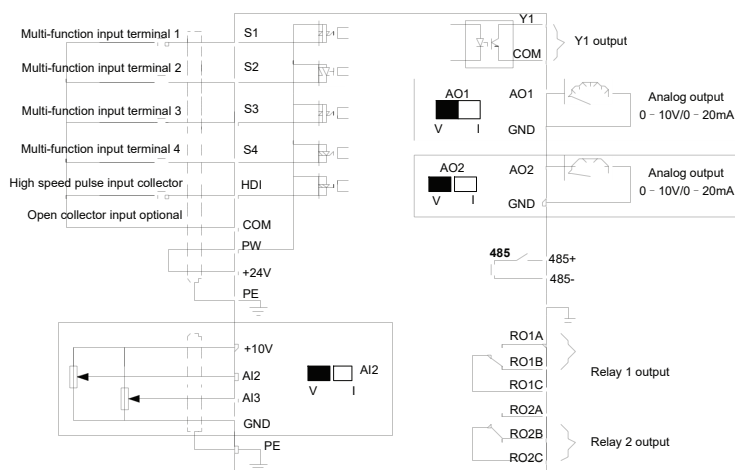
① ② ③ ④

| Key | No. | Detailed description | Detailed content |
|--------------------|-----|----------------------|---|
| Abbreviation | ① | Product abbreviation | GD20-EU is short for Goodrive20-EU |
| Rated power | ② | Power range | 2R2: 2.2kW G: constant torque load |
| Voltage degree | ③ | Voltage degree | S12: AC 1PH 110V~120V S2: AC 1PH 200V~240V 2: AC 3PH 200V~240V 4: AC 3PH 380V~480V |
| Certification mark | ④ | Used in America | Certification by UL and CUL *S12 model are certified UL by default without "UL" mark |

Power Ratings (GD20-UL)

| Model | Output power (kW) | Output horsepower (kW) | Rated input current (A) | Rated output current (A) | Gross weight (lbs) | Dimensions W*H*D (mm) |
|------------------|-------------------|------------------------|-------------------------|--------------------------|--------------------|-----------------------|
| AC 1PH 110V~120V | | | | | | |
| GD20-0R4G-S12 | 0.4 | 0.5 | 8.1 | 2.5 | 3.3 | 80*185*140.5 |
| GD20-0R7G-S12 | 0.75 | 1 | 15.1 | 4.2 | | |
| GD20-1R1G-S12 | 1.1 | 1.5 | 20 | 5.8 | | |
| AC 1PH 200V~240V | | | | | | |
| GD20-0R4G-S2-UL | 0.4 | 0.5 | 6.5 | 2.5 | 2.4 | 80*160*123.5 |
| GD20-0R7G-S2-UL | 0.75 | 1 | 9.3 | 4.2 | | |
| GD20-1R5G-S2-UL | 1.5 | 2 | 15.7 | 7.5 | 3.3 | 80*185*140.5 |
| GD20-2R2G-S2-UL | 2.2 | 3 | 20 | 10 | | |
| AC 3PH 200V~240V | | | | | | |
| GD20-0R4G-2-UL | 0.4 | 0.5 | 3.7 | 2.5 | 3.3 | 80*185*140.5 |
| GD20-0R7G-2-UL | 0.75 | 1 | 5.0 | 4.2 | | |
| AC 3PH 380V~480V | | | | | | |
| GD20-0R7G-4-UL | 0.75 | 1 | 3.4 | 2.5 | 2.9 | 80*185*140.5 |
| GD20-1R5G-4-UL | 1.5 | 2 | 5.0 | 4.2 | | |
| GD20-2R2G-4-UL | 2.2 | 3 | 5.8 | 5.5 | | |

Control Circuit Wiring Diagram



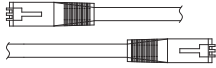







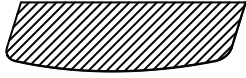
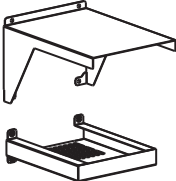


| Terminal | Quantity | Description |
|------------------------|-------------|--------------------------------|
| Digital input | 4 (S1-S4) | 1kHz, NPN, PNP |
| High speed pulse input | 1 (HDI) | 50kHz, NPN, PNP |
| Analog input | 2 (AI2-AI3) | 0~10V, 0~20mA, -10V~+10V |
| ON-OFF output | 1 (Y1) | Maximum output frequency: 1kHz |
| Analog output | 2 (AO) | 0~10V, 0~20mA |
| Relay output | 2 (RO1-RO2) | 3A/250VAC, NO+NC |

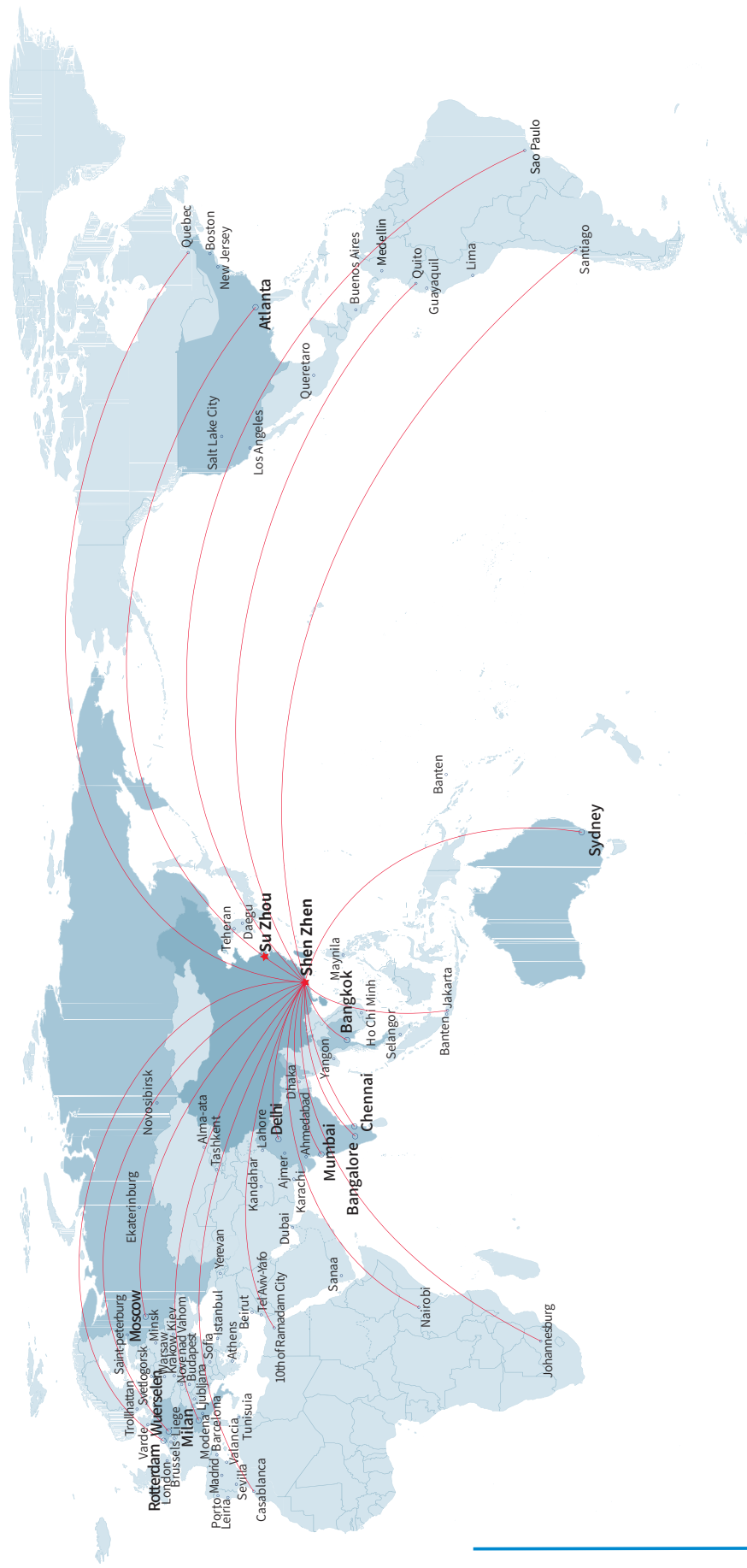
Technical specification

| Functions | | Specifications |
|---------------------------|--|--|
| Power Input | GD20-UL Input voltage (V) & power | AC 1PH 110V~120V, rated voltage: 110V 0.4~1.1kW(0.5~1.5HP) AC 1PH 200V~240V, rated voltage: 220V 0.4~2.2kW(0.5~3HP) AC 3PH 200V~240V, rated voltage: 220V 0.4~0.75kW(0.5~1HP) AC 3PH 380V~480V, rated voltage: 460V 0.75~2.2kW(1~3HP) |
| | GD20-EU Input voltage (V) & power | AC 1PH 200V~240V, rated voltage: 230V 0.4~2.2kW(0.5~3HP) AC 3PH 200V~240V, rated voltage: 230V 0.4~2.2kW(0.5~3HP) AC 3PH 380V~480V, rated voltage: 400V 0.75~1.1kW(1~1.5HP) |
| | Input frequency (Hz) | 50Hz or 60Hz; allowed range: 47 – 63Hz |
| Power Output | Output voltage (V) | 0 – input voltage |
| | Output frequency (Hz) | 0 – 400Hz |
| Technical Control Feature | Control mode | SVPWM, SVC |
| | Motor | Asynchronous motor |
| | Adjustable-speed ratio | Asynchronous motor 1:100 (SVC) |
| | Speed control accuracy | ±0.2% (SVC) |
| | Speed fluctuation | ±0.3% (SVC) |
| | Torque response | <20ms (SVC) |
| | Torque control accuracy | 10% |
| | Starting torque | 0.5Hz/150% (SVC) |
| Running Control Feature | Frequency setting method | Digital setting, analog setting, pulse frequency setting, multi-step speed running setting, simple PLC setting, PID setting, MODBUS communication setting Shift between the set combination and set channel. |
| | Auto-adjustment of the voltage | Keep a stable voltage automatically when the grid voltage transients |
| | Fault protection | Provide comprehensive fault protection functions: overcurrent, overvoltage, undervoltage, overheating, phase loss and overload, etc. |
| | Start after speed tracking | Smoothing starting for running motor |
| Peripheral Interface | Analog input | 1 (AI2) 0~10V/0~20mA and 1 (AI3) -10~10V |
| | Analog output | 2 (AO1, AO2) 0~10V/0~20mA * AO2 output only available on GD20-EU >2.2kW |
| | Digital input | 4 common inputs, the max. frequency: 1kHz; 1 high speed input, the max. frequency: 50kHz |
| | GD20-EU Digital output | 1 Y1 terminal output |
| | GD20-UL Digital output | 1 Y1 terminal output; 2 programmable relay outputs |
| | Relay output | 2 programmable relay outputs (Only one relay output for VFD ≤ 2.2kW) RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capacity: 3A/AC250V |
| Others | Mountable method | Wall and rail mountable |
| | Braking unit | Standard built-in braking unit |
| | EMI filter | Optional external filter: meet the degree requirement of IEC61800-3 C2, IEC61800-3 C3 |
| | Temperature of running environment | -10 to 50°C, derate 1% for every increased 1°C when the temperature is higher than 40°C |
| | Altitude | Below 1000m. If the elevation is above 1000m, derate 1% for every additional 100m. |
| | Certification | CE, UL, CUL |
| | Cooling | Fan cooling |
| | GD20-EU STO level | SIL2/SIL3 |
| Protective degree | IP20 (Standard); NEMA1 kits (optional) | |

Optional parts

| Function | Part | Description | Picture |
|--------------------|--------------------|--|---|
| External Control | LED Keypad | External LED keypad for remote operation of the drive, maximum distance 30m |  |
| | LED Copy Keypad | External copy LED keypad with function of parameter copying for quick commissioning of multiple drives |  |
| | Extension Cable | Various size cables available while use external keypad control |  |
| | Keypad Bracket | Used to install keypad flush on the front of cabinet door |  |
| Reactor | Input Reactor | Suppress inrush voltage, reduce inrush & peak current, improve power factor, reduce harmonics |  |
| | Output Reactor | Reduce transient voltage dv/dt and prolong motor life. It can reduce motor noise, leakage current, output interference and eddy current loss. Solve the problem of long-term output oscillation. |  |
| | DC Reactor | To weaken the high-order harmonic component of the input current and reduce the surge current. Improve power factor, solve the harmonic problem. |  |
| Filter | Input Filter | Control the electromagnetic interference generated from the inverter |  |
| | Output Filter | Control the interference from the output side of the inverter |  |
| Braking | Braking Resistors | Used to shorten deceleration time, and avoid over-voltage issue while in deceleration stop. |  |
| Ingress protection | Dam-Board IP30 Kit | Dam-board kit for installation on inverter side vents. Used for severe environments and improved ingress protection. When installed this kit, the inverter needs to be derated by 10%. |  |
| | NEMA1 Kit | IP21/NEMA 1 Enclosure Kit |  |

Marketing service network

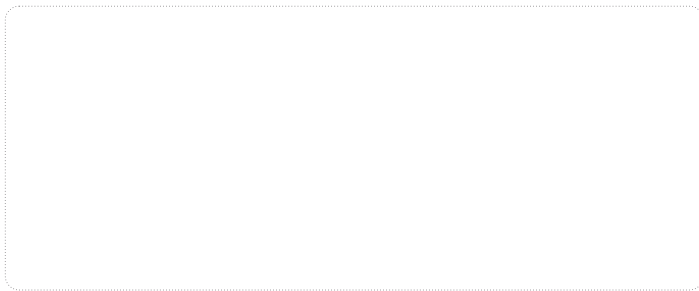


★ INVT Headquarters

INVT Sales & Service in 11 countries

Sales and Service Partners in 65 countries

Your trusted industry automation solution provider



Service line:86-755-23535967 E-mail:overseas@invt.com.cn Website:www.invt.com

SHENZHEN INVT ELECTRIC CO.,LTD. INVT Guangming Technology Building, Songbai Road, Matian, Guangming District, Shenzhen, China

- Industrial Automation:**
- Variable-Frequency Drive
 - Servo & Motion Control
 - Motor & Electric Spindle
 - PLC
 - HMI
 - Intelligent Elevator Control System
 - Traction Drive
- Electric Power:**
- SVG
 - Solar Pump Controller
 - UPS
 - Online Energy Management System
 - New Energy Vehicle Electric Control System

INVT Copyright.
Information may be subject to change without notice during product improving.

66003-00059 20200814(V1.0)