

OPTIDRIVE PLUS 3^{GV}

3rd Generation Vector Control

AC Variable Speed Drive
0.37kW - 160kW (0.5 - 250HP)
200-600V

200% torque down to 0.0Hz reliable high speed operation and infra red communication.

Optidrive Plus 3^{GV} is the natural evolution of the Optidrive family adding ultimate motor control to established Optidrive benchmarks of control and ease of use.

Optidrive Plus 3^{GV} uses 3^{GV} technology, a revolutionary and patented motor control strategy. 3^{GV} technology delivers 200% torque down to 0.0Hz allowing this unique open loop product to be used without any feedback device in many traditional closed loop applications.

Only the motor name plate data is required to achieve optimum performance, the drive continuously and automatically determines and tracks the key motor characteristics required for vector control.

Optidrive Plus 3^{GV} can be commissioned using the unique Optiwand PDA software designed for use on pocket pc's. Communication takes place without wires using infrared light to quickly and accurately transfer data.



Key Benefits >>

- Compact Design for reduced panel space requirements
- Easy Key Mounting Slots giving fast and easy installation
- Pluggable Control Terminals enable simple, easy access control wiring
- Up to 50°C Ambient Temperature, rugged design for harsh environments
- Internal RFI Filter for compliance with the latest EMC standards
- 14 Basic Parameters (40 Max) allow fast commission with powerful yet simple features
- High Visibility LED Display with user scaling, easy to read
- 32kHz Output Switching Frequency for ultra quiet motor operation
- 150% Overload for 60 Seconds (175% for 2 seconds), high starting capacity for demanding applications
- Mains dip ride through allows continuous operation through short periods of supply loss
- Built in Master – Slave control function with fast set up and selectable scaling
- Built in Infra Red programming port requires no cables

Industry Sectors

- Plastics
- Machine Tools
- Rubber
- Cranes
- Pumping
- Elevators
- Chemical



| Specification | | OPTIDRIVE PLUS 3 ^{GV} |
|----------------------------------|----------------------------|---|
| Output ratings | Overload Capacity | 150% for 60 secs 175% for 2 secs |
| | Frequency | 0...2000Hz |
| Input Ratings | Frequency | 48 - 62Hz |
| | Voltage | 200 - 240 + / - 10% 1 Phase (0.37 - 22kW / 0.5 - 30HP) 200 - 240 + / - 10% 3 Phase (1.5 - 90kW / 2 - 120HP) 380 - 480 + / - 10% 1 Phase (0.75 - 90kW / 1 - 105HP) 380 - 480 + / - 10% 3 Phase (1.5 - 160kW / 2 - 250HP) 480 - 525 + / - 10% 3 Phase (55 - 200kW) 500 - 600 + / - 10% 3 Phase (1.5 - 45kW / 2 - 60HP) |
| Ambient Conditions | Temperature | Operating : -10 to 50°C Max; Storage : -40 to +60°C |
| | Altitude | 0 - 2000m, derate 5% per 100m above 1000m |
| | Ingress Protection | IP20, Optional IP55 |
| Programming | Keypad | Yes |
| | PC | Yes |
| | PDA | Yes |
| Control Specification | Control Method | V / F 3GV Sensorless Vector Closed Loop Vector (with optional encoder feedback interface) |
| | PWM Frequency | 4...32kHz (effective) |
| | V/Hz ratio | Linear (1 adjustment point) |
| | Boost | Automatic after autotune |
| | Stop Mode | Coast / Ramp / DC Brake |
| | Internal Brake transistor | Yes (Size 2 - 6). External Resistor required |
| | Capacity | 100% Drive Rated Power continuously |
| | Skip Frequency | One point, adjustable frequency band |
| | Frequency setpoint control | 0...10 VDC +/- 10 VDC 0...24 VDC 4...20mA 0..20mA Digital - Keypad RS485 (Master Slave) ModBus |
| | Pre-set speeds | 8 |
| | PID Control | Yes |
| | Spin Start | Yes |
| | Acceleration | 0..3000 sec |
| | Deceleration | (2 ramps) 0..3000 sec |
| | S Curve Accel/Decel | Firmware Download Available |
| | PC Setup Software | Optistore Plus |
| | Programmable I/O | Input 1 |
| Input 2 / Output 2 | | User Selectable Digital Input / Output |
| Input 3 | | User Selectable Unipolar Analog / Digital Input |
| Input 4 | | User Selectable Bipolar Analog / Digital Input |
| Output 1 | | Programmable Analog / Digital Output |
| Relay 1 | | Relay Output (30 VDC 5A, 250 VAC, 6A) |
| Keypad Display | Operating Display | Output Frequency, Current, Rpm, Power and User Scalable values |
| | Remote mount | Optional Optiport Plus remote mounting keypad |
| Motor feedback | Feedback type | With Encoder Module - HTL or TTL |
| | Pulses/Rev | Adjustable |
| | Max Frequency | 500kHz |
| Protective Functions | Inverter Trip | Over voltage Over current Under voltage External trip Motor overload Over temperature Short circuited Earth Fault Under Voltage |
| | Memory | Last 4 Trips stored |
| Bus communication | Modbus | Optional with firmware download |
| | Profibus DP | via Gateway |
| | DeviceNet | via Gateway |
| | RS485 (Optibus) | Standard |
| Compliance with Standards | EN 61800-3:2004 | Adjustable speed electrical power drive systems. EMC requirements |
| Additional Features | | Built in Master - Slave Operation Mode PID 'Sleep' Mode Energy Optimising Function |



OPTIDRIVE PLUS 3^{GV} Electrical Data in kW

| 200 - 240V 1 Phase | Motor Power (kW) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-12037-IN | 0.37 | 2.3 | 1 |
| ODP-12075-IN | 0.75 | 4.3 | 1 |
| ODP-12150-IN | 1.5 | 7 | 1 |
| ODP-22150-IN | 1.5 | 7 | 2 |
| ODP-22220-IN | 2.2 | 10.5 | 2 |

| 200 - 240V 3 Phase | Motor Power (kW) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP3-22150-IN | 1.5 | 7 | 2 |
| ODP3-22220-IN | 2.2 | 10.5 | 2 |
| ODP-32030-IN | 3 | 14 | 3 |
| ODP-32040-IN | 4 | 18 | 3 |
| ODP-32055-IN | 5.5 | 25 | 3 |
| ODP-42075-IN | 7.5 | 39 | 4 |
| ODP-42110-IN | 11 | 46 | 4 |
| ODP-42150-IN | 15 | 61 | 4 |
| ODP-42185-IN | 18.5 | 72 | 4 |
| ODP-52220-IN | 22 | 90 | 5 |
| ODP-52300-IN | 30 | 110 | 5 |
| ODP-52370-IN | 37 | 150 | 5 |
| ODP-52450-IN | 45 | 180 | 5 |
| ODP-62055-IN | 55 | 202 | 6 |
| ODP-62075-IN | 75 | 240 | 6 |
| ODP-62090-IN | 90 | 300 | 6 |

Note : Suitable for use on single phase supply with 50% derating

| 380 - 480V 3 Phase | Motor Power (kW) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-24075-IN | 0.75 | 2.2 | 2 |
| ODP-24150-IN | 1.5 | 4.1 | 2 |
| ODP-24220-IN | 2.2 | 5.8 | 2 |
| ODP-24400-IN | 4 | 9.5 | 2 |
| ODP-34055-IN | 5.5 | 14 | 3 |
| ODP-34075-IN | 7.5 | 18 | 3 |
| ODP-34110-IN | 11 | 25 | 3 |
| ODP-34150-IN | 15 | 30 | 3 |
| ODP-44185-IN | 18.5 | 39 | 4 |
| ODP-44220-IN | 22 | 46 | 4 |
| ODP-44300-IN | 30 | 61 | 4 |
| ODP-44370-IN | 37 | 72 | 4 |
| ODP-44450-IN# | 45 | 90 | 4 |
| ODP-54450-IN | 45 | 90 | 5 |
| ODP-54550-IN | 55 | 110 | 5 |
| ODP-54750-IN | 75 | 150 | 5 |
| ODP-54900-IN | 90 | 180 | 5 |
| ODP-64110-IN | 110 | 202 | 6 |
| ODP-64132-IN | 132 | 240 | 6 |
| ODP-64160-IN | 160 | 300 | 6 |

Note : Suitable for use on single phase supply with 50% derating. #Drive has 110% overload for 60 seconds

| 480 - 525V 3 Phase | Motor Power (kW) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-55550-IN | 55 | 90 | 5 |
| ODP-55750-IN | 75 | 110 | 5 |
| ODP-55900-IN | 90 | 150 | 5 |
| ODP-65132-IN | 132 | 202 | 6 |
| ODP-65160-IN | 160 | 240 | 6 |
| ODP-65200-IN | 200 | 270 | 6 |

Note : Not UL Approved

| 500 - 600V 3 Phase | Motor Power (kW) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-25075-IN* | 0.75 | 1.7 | 2 |
| ODP-25150-IN* | 1.5 | 3.1 | 2 |
| ODP-25220-IN* | 2.2 | 4.1 | 2 |
| ODP-25370-IN* | 3.7 | 6.1 | 2 |
| ODP-25550-IN* | 5.5 | 9 | 2 |
| ODP-35075-IN | 7.5 | 14 | 3 |
| ODP-35110-IN | 11 | 18 | 3 |
| ODP-35150-IN | 15 | 24 | 3 |
| ODP-45220-IN | 22 | 39 | 4 |
| ODP-45300-IN | 30 | 46 | 4 |
| ODP-45450-IN | 45 | 62 | 4 |

* : Requires External Input Choke

OPTIDRIVE PLUS 3^{GV} Electrical Data in HP

| 200 - 240V 1 Phase | Motor Power (HP) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-12005-USA | 0.5 | 2.3 | 1 |
| ODP-12010-USA | 1 | 4.3 | 1 |
| ODP-12020-USA | 2 | 7 | 1 |
| ODP-22020-USA | 2 | 7 | 2 |
| ODP-22030-USA | 3 | 10.5 | 2 |

| 200 - 240V 3 Phase | Motor Power (HP) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP3-22020-USA | 2 | 7 | 2 |
| ODP3-22030-USA | 3 | 10.5 | 2 |
| ODP-32040-USA | 4 | 14 | 3 |
| ODP-32050-USA | 5 | 18 | 3 |
| ODP-32075-USA | 7.5 | 25 | 3 |
| ODP-42100-USA | 10 | 39 | 4 |
| ODP-42150-USA | 15 | 46 | 4 |
| ODP-42200-USA | 20 | 61 | 4 |
| ODP-42250-USA | 25 | 72 | 4 |
| ODP-52300-USA | 30 | 90 | 5 |
| ODP-52400-USA | 40 | 110 | 5 |
| ODP-52500-USA | 50 | 150 | 5 |
| ODP-52600-USA | 60 | 180 | 5 |
| ODP-62075-USA | 75 | 202 | 6 |
| ODP-62100-USA | 100 | 240 | 6 |
| ODP-62120-USA | 120 | 300 | 6 |

Note : Suitable for use on single phase supply with 50% derating

| 380 - 480V 3 Phase | Motor Power (HP) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-24010-USA | 1 | 2.2 | 2 |
| ODP-24020-USA | 2 | 4.1 | 2 |
| ODP-24030-USA | 3 | 5.8 | 2 |
| ODP-24050-USA | 5 | 9.5 | 2 |
| ODP-34075-USA | 7.5 | 14 | 3 |
| ODP-34100-USA | 10 | 18 | 3 |
| ODP-34150-USA | 15 | 25 | 3 |
| ODP-34200-USA | 20 | 30 | 3 |
| ODP-44250-USA | 25 | 39 | 4 |
| ODP-44300-USA | 30 | 46 | 4 |
| ODP-44400-USA | 40 | 61 | 4 |
| ODP-44500-USA | 50 | 72 | 4 |
| ODP-44600-USA# | 60 | 90 | 4 |
| ODP-54600-USA | 60 | 90 | 5 |
| ODP-54750-USA | 75 | 110 | 5 |
| ODP-54100-USA | 100 | 150 | 5 |
| ODP-54120-USA | 150 | 180 | 5 |
| ODP-64150-USA | 160 | 202 | 6 |
| ODP-64175-USA | 200 | 240 | 6 |
| ODP-64210-USA | 250 | 300 | 6 |

Note : Suitable for use on single phase supply with 50% derating. #Drive has 110% overload for 60 seconds

| 500 - 600V 3 Phase | Motor Power (HP) | Output Current (A) | Frame Size |
|-----------------------|---------------------|-----------------------|------------|
| ODP-25010-USA* | 1 | 1.7 | 2 |
| ODP-25020-USA* | 2 | 3.1 | 2 |
| ODP-25030-USA* | 3 | 4.1 | 2 |
| ODP-25050-USA* | 5 | 6.1 | 2 |
| ODP-25075-USA* | 7.5 | 9 | 2 |
| ODP-35100-USA | 10 | 14 | 3 |
| ODP-35150-USA | 15 | 18 | 3 |
| ODP-35200-USA | 20 | 24 | 3 |
| ODP-45300-USA | 30 | 39 | 4 |
| ODP-45400-USA | 40 | 46 | 4 |
| ODP-45600-USA | 60 | 62 | 4 |

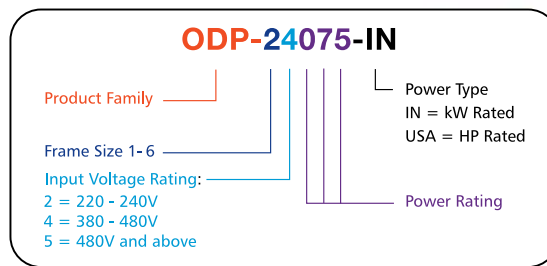
* : Requires External Input Choke



OPTIDRIVE PLUS 3GV Dimensions

| Size | Height (mm) | Width (mm) | Depth (mm) | Weight (kg) | Fixings |
|------|-------------|------------|------------|-------------|---------|
| 1 | 155 | 80 | 130 | 1.1 | 2 * M4 |
| 2 | 260 | 100 | 175 | 2.6 | 2 * M4 |
| 3 | 260 | 171 | 175 | 5.3 | 4 * M4 |
| 4 | 520 | 340 | 220 | 28 | 4 * M8 |
| 5 | 1045 | 340 | 220 | 67 | 4 * M8 |
| 6+ | 1100 | 340 | 330 | 55 | 4 * M8 |

♦ : Supplied with External Input Choke



Options

| Product | Description | Category |
|-------------------|--|----------|
| OptiFilter | RFI Line Filter | Page 18 |
| Optibrake | Dynamic Braking Resistor | Page 19 |
| Input Chokes | Mains Supply Input Chokes | Page 20 |
| Output Filters | Motor Output Filter, recommended for long motor cable runs | Page 21 |
| 3ROUT | 3 Relay Output Option | Page 22 |
| 2ROUT | 2 Relay Output Option | Page 22 |
| HVACO | 2 Relay Output for HVAC operation | Page 22 |
| LOGIP | High Voltage Logic Input Option | Page 22 |
| Encoder | Closed loop speed feedback module | Page 23 |
| Optiport Plus | Optiport Plus remote mounting keypad | Page 24 |
| Network Cables | RJ11 Cables and Splitters | Page 25 |
| PC Connection Kit | Isolated RS485 USB Adaptor | Page 25 |
| Optiwand PDA / SP | Commissioning and backup software for Pocket PC / PDA | Page 26 |
| Optistore Plus | Commissioning and Storage Software for PC | Page 27 |
| Fieldbus Gateway | DeviceNet, Profibus and Ethernet gateways | Page 28 |