

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 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...500Hz	
Input Ratings	Frequency	48–62Hz	
	Voltage	200–240V ± 10% 1 Phase (0.37–22kW / 0.5–30HP) 200–240V ± 10% 3 Phase (1.5–90kW / 2–120HP) 380–480V ± 10% 1 Phase (0.75–90kW / 1–105HP) 380–480V ± 10% 3 Phase (1.5–160kW / 2–250HP) 480–525V ± 10% 3 Phase (55–200kW) 500–600V ± 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 3 ^{GV} 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 (sizes 2–6); External resistor required	
	Capacity	100% Drive Rated Power continuously	
	Skip frequency	One point, adjustable frequency band	
	Frequency setpoint control	0...10V DC	
		± 10V DC	
		0...24V DC	
		4...20mA	
		0...20mA	
	Digital – Keypad		
	RS485 (Master Slave)		
	Modbus RTU		
	Preset speeds	8	
PI control	Yes		
Spin start	Yes		
Acceleration	0...3000 secs		
Deceleration	(2 ramps) 0...3000 secs		
S Curve accel/decel	Firmware Download Available		
PC setup software	Optistore V3		
Programmable I/O	Input 1	Programmable Digital Input	
	Input 2 / Output 2	User-selectable Digital Input / Output	
	Input 3	User-selectable Unipolar Analogue / Digital Input	
	Input 4	User-selectable Bipolar Analogue / Digital Input	
	Output 1	Programmable Analogue / Digital Output	
	Relay 1	Relay Output (30V DC 5A, 250V AC 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	
	Memory	Last 4 trips stored	
Bus Communication	Modbus RTU	Standard	
	Profibus DP	via Gateway	
	DeviceNet	via Gateway	
	RS485 (Optibus)	Standard	
Standards Compliance	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 secs

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 secs

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

Size 1

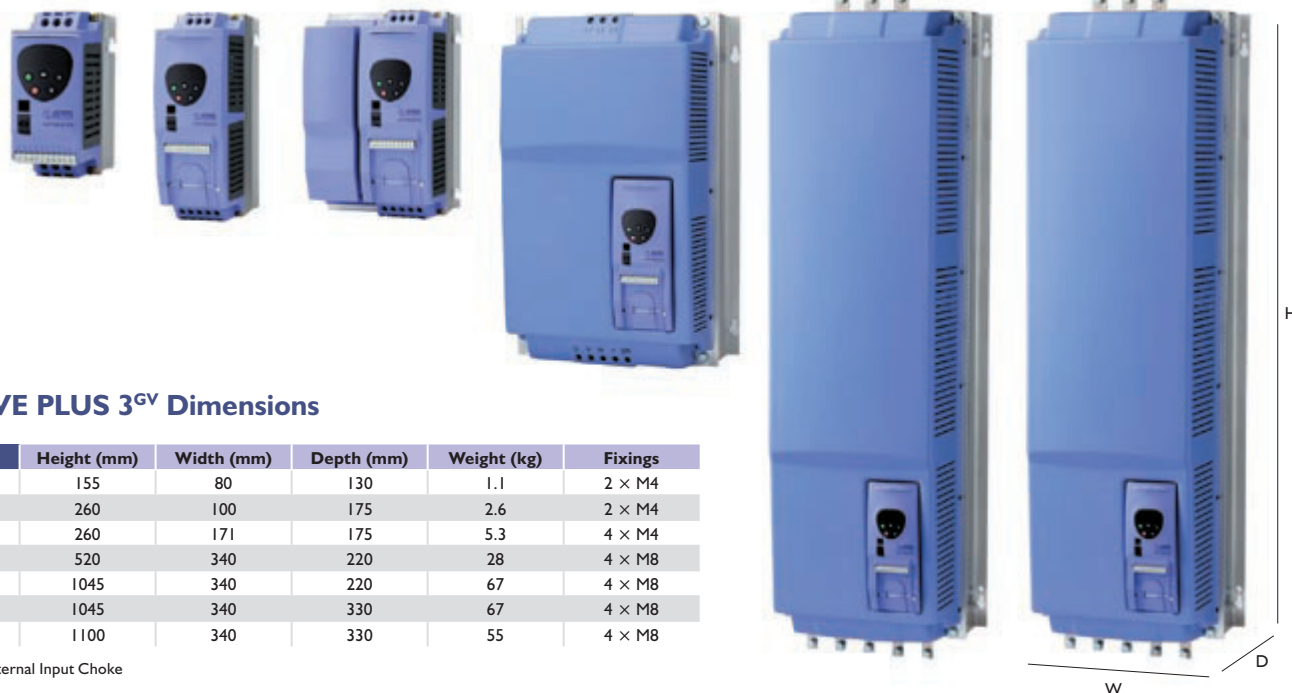
Size 2

Size 3

Size 4

Size 5

Size 6

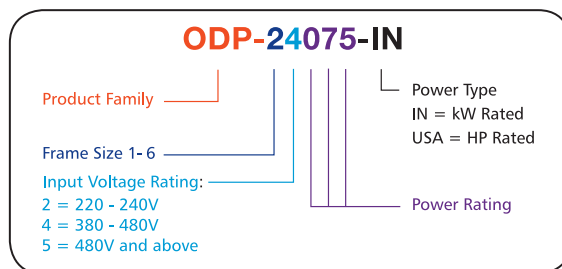


OPTIDRIVE PLUS 3^{GV} Dimensions

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 (90 – 150A)	1045	340	220	67	4 × M8
5 (180A)	1045	340	330	67	4 × M8
6*	1100	340	330	55	4 × M8

* Supplied with External Input Choke

OPTIDRIVE 3^{GV} Part Number Designation



Options

Product	Description
OptiFilter	RFI Line Filter
Optibrake	Dynamic Braking Resistor
Input Chokes	Mains Supply Input Chokes
Output Filters	Motor Output Filter, recommended for long motor cable runs
3ROUT	3 Relay Output Option
2ROUT	2 Relay Output Option
HVACO	2 Relay Output for HVAC operation
LOGIP	High Voltage Logic Input Option
Encoder	Closed loop speed feedback module
Optiport Plus	Optiport Plus remote mounting keypad
Network Cables	RJ11 Cables and Splitters
PC Connection Kit	Isolated RS485 USB Adaptor
Optiwand PDA / SP	Commissioning and backup software for Pocket PC / PDA
Optistore V3	Commissioning and Storage Software for PC
Fieldbus Gateway	DeviceNet, Profibus and Ethernet gateways