



VARIDYNE™ 2 can do even more...

Expand your drive's features with a comprehensive range of accessories:

1: Operator Interface Options

Choose from a wide range of optional remote keypads and operator interfaces to commission and control the drive.

- **VKA Remote Keypad** – A simple LED keypad with a high IP65 rating.
- **SM-Keypad Plus** – A plain text, multi-language LCD keypad.

2: Installation Options

Flexible installation accessories help you to optimize the drive for your application.

- An internal braking transistor is standard on VARIDYNE™ 2. By fitting an optional braking resistor, you can decelerate even heavier loads more rapidly.
- Additional EMC Filters supplement the drive's internal filter to allow you to meet even more stringent standards.
- UL Type 1 kit and cover kit options up to Size C

3: Other Options

Add intelligence and connectivity to your drive with a range of integration accessories. VARIDYNE™ 2 is as simple or sophisticated as you need it to be.

- **I/O Modules** – A range of click-in I/O options are available that allow you to further extend the functionality of the drive.
- **SmartStick** – Inserting the SmartStick into the front fascia of the drive enables parameters to be copied from one drive to another. This is especially useful for replicating a configuration across multiple drives.
- **Serial cable** – This is a safe isolated cable to link your PC with the drive.
- **PC software tools** – Included with the drive, these provide the means to gain easy access to the advanced features.
- **More Options** – Contact USEM/Emerson Motor Technologies for communications and control options.

Note: Click-in option modules may only be fitted on drives from Size B upwards.

VARIDYNE 2 in Ready Pack Enclosures: Speed when you need it

VARIDYNE 2 drives soon to be available in NEMA 12 and NEMA 3R pre-engineered enclosures. Manual and Automatic Bypass options available; ask your Emerson Motor Technologies/USEM representative.



Contact

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Product Support Help Line:
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VARIDYNE™ 2 – precision motor control made easy!

Dynamic Performance that Exceeds Expectations

Though simple to operate, VARIDYNE™ 2 has the performance characteristics to allow it to solve applications normally requiring more complex and expensive drives. VARIDYNE™ 2 is robust and ideal for industrial applications demanding high cycle rates and tight speed control, such as indexers and fuel pumps. Its superior shaft performance makes it incredibly responsive to either demand or load changes. The ability to hold torque down to 1 Hz makes it ideal for material handling applications. Selectable switching frequencies allow for quiet motor operation.

Superior Control Functions

The VARIDYNE™ 2 establishes its dominant status in simple general purpose drives providing a level of performance and flexibility not found in any other low-cost, open loop AC drive.

Lower Cost Solution from Premium Technology

VARIDYNE™ 2 includes premium functionalities as standard: logic functions, comparators, motorised potentiometer, PID regulator, dynamic braking transistor with optional external braking resistor and DC injection braking as standard. Premium functionalities and Plug-in options ensure that in more complex applications VARIDYNE™ 2 can deliver more than the average general purpose drive – giving you lower cost solutions and better productivity in your motor control applications.

Powerful and Reliable

VARIDYNE™ 2 has been developed, tested and proven in the harshest operating conditions by Emerson's dedicated electrical, mechanical and software engineering groups. The result: a strong drive that enables you to get your machine running quickly and consistently with high productivity.

Trust USEM, the world leaders in motor technology, with your AC Drive needs.



1/3 HP - 200 HP
110V | 230V | 380V | 460V | 575V | 690V
Sensorless Vector Control



CONSIDER IT SOLVED.™

VARIDYNE™ 2 Selection Chart

110/120 VAC +/-10% 1-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFKB1100075	HD Rated Only			0.75	1	4	B
VFKB1100110	HD Rated Only			1.1	1.5	5.2	B

200-240 VAC +/-10% 1-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFKA1200025	HD Rated Only			0.25	0.33	1.7	A
VFKA1200037	HD Rated Only			0.37	0.5	2.2	A
VFKA1200055	HD Rated Only			0.55	0.75	3	A
VFKA1200075	HD Rated Only			0.75	1	4	A
VFKBD200110	HD Rated Only			1.1	1.5	5.2	B
VFKBD200150	HD Rated Only			1.5	2	7	B
VFKBC200220	HD Rated Only			2.2	3	9.6	B

200/240 VAC +/-10% 3-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFKBD200110	HD Rated Only			1.1	1.5	5.2	B
VFKBD200150	HD Rated Only			1.5	2	7	B
VFKBC200220	HD Rated Only			2.2	3	9.6	B
VFK2201	4	5	15.5	3	3	12.6	2
VFK2202	5.5	7.5	22	4	5	17	2
VFK2203	7.5	10	28	5.5	7.5	25	2
VFK3201	11	15	42	7.5	10	31	3
VFK3202	15	20	54	11	15	42	3
VFK4201	18.5	25	68	15	20	56	4
VFK4202	22	30	80	18.5	25	68	4
VFK4203	30	40	104	22	30	80	4

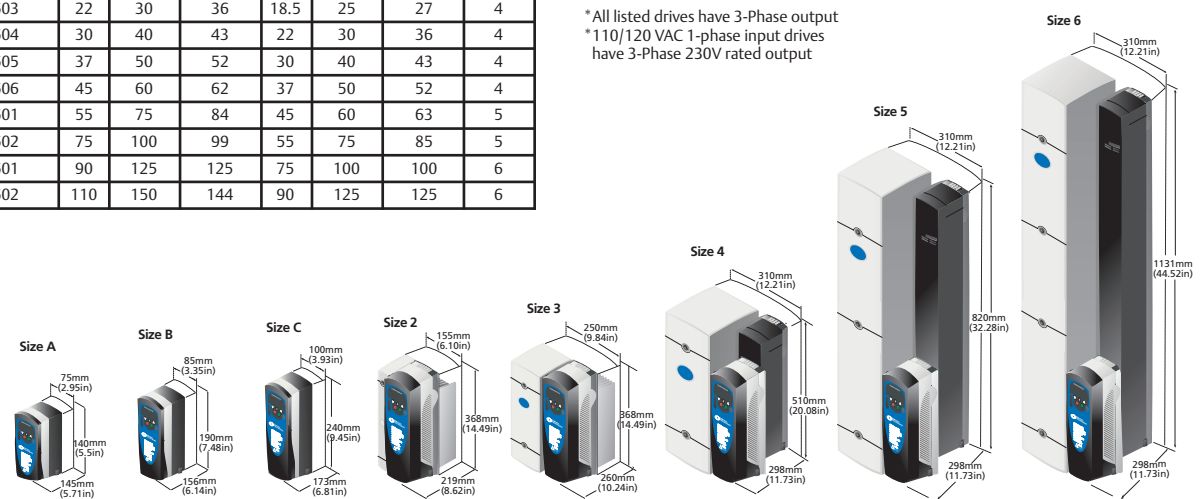
575 VAC +/-10% 3-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFK3501	3	3	5.4	2.2	2	4.1	3
VFK3502	4	5	6.1	3	3	5.4	3
VFK3503	5.5	7.5	8.4	4	5	6.1	3
VFK3504	7.5	10	11	5.5	7.5	9.5	3
VFK3505	11	15	16	7.5	10	12	3
VFK3506	15	20	22	11	15	18	3
VFK3507	18.5	25	27	15	20	22	3
VFK4603	22	30	36	18.5	25	27	4
VFK4604	30	40	43	22	30	36	4
VFK4605	37	50	52	30	40	43	4
VFK4606	45	60	62	37	50	52	4
VFK5601	55	75	84	45	60	63	5
VFK5602	75	100	99	55	75	85	5
VFK6601	90	125	125	75	100	100	6
VFK6602	110	150	144	90	125	125	6

380/480 VAC +/-10% 3-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFKB3400037	0.37	0.5	1.3	0.37	0.5	1.3	B
VFKB3400055	0.55	0.75	1.7	0.55	0.75	1.7	B
VFKB3400075	0.75	1	2.1	0.75	1	2.1	B
VFKB3400110	1.1	1.5	2.8	1.1	1.5	2.8	B
VFKB3400150	1.5	2	3.8	1.5	2	3.8	B
VFKC3400220	2.2	3	5.1	2.2	3	5.1	C
VFKC3400300	3	3	7.2	3	3	7.2	C
VFKC3400400	4	5	9	4	5	9	C
VFK2401	7.5	10	15.3	5.5	10	13	2
VFK2402	11	15	21	7.5	10	16.5	2
VFK2403	15	20	29	11	20	25	2
VFK2404	15	20	29	15	20	29	2
VFK3401	18.5	25	35	15	25	32	3
VFK3402	22	30	43	18.5	30	40	3
VFK3403	30	40	56	22	30	46	3
VFK4401	37	50	68	30	50	60	4
VFK4402	45	60	83	37	60	74	4
VFK4403	55	75	104	45	75	96	4
VFK5401	75	100	138	55	100	124	5
VFK5402	90	125	168	75	125	156	5
VFK6401	110	150	205	90	150	180	6
VFK6402	132	200	236	110	150	210	6

690 VAC +/-10% 3-Phase	Normal Duty			Heavy Duty			Drive Frame
	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	Typical output (kW)	Motor Power (HP)	Max Continuous Current (A)	
Catalog Number							
VFK4601	18.5	25	22	15	20	19	4
VFK4602	22	30	27	18.5	25	22	4
VFK4603	30	40	36	22	30	27	4
VFK4604	37	50	43	30	40	36	4
VFK4605	45	60	52	37	50	43	4
VFK4606	55	75	62	45	60	52	4
VFK5601	75	100	84	55	75	63	5
VFK5602	90	125	99	75	100	85	5
VFK6601	110	150	125	90	125	100	6
VFK6602	132	175	144	110	150	125	6

Normal Duty For applications that use self-ventilated induction motors and require a low overload capability (e.g. fans, pumps)
Heavy Duty 150% overload current for 60 seconds. For constant torque applications that require a high overload capability (e.g. cranes, hoists).

* All listed drives have 3-Phase output
 * 110/120 VAC 1-phase input drives have 3-Phase 230V rated output



VARIDYNE™ 2—Simple and compact, yet powerful.

- Easy to set up – all the parameters you need for typical applications are shown on the front facia – it could not be easier
- Easy installation – choose between simple panel mounting and DIN-rail mounting (up to 1.5 kW/2HP)
- Simple connections – easy access terminals with clear marking
- Simple start up – simple push button set up – no need for complex programming
- Built-in EMC filter
- Display Keypad included as standard
- Software and Documentation CD included as standard
- Communications Port RS485 – Modbus RTU as standard
- Available up to 132 kW/200 HP

Simple to Use.

VARIDYNE™ 2 is an easy drive – easy to connect, easy to configure and easy to install.

Easy to connect - All connectors are generously sized and clearly labeled.

Easy to configure - The configuration settings you need for most applications are detailed on the front facia of the drive.

Easy to install - Flexibility allows you to install the drive in the best way for your application.

- DIN rail fixing integrated on small sizes
- Provision for “through hole mounting” is standard from Size 2 upwards.

Typical Applications

- Pumps
- Compressors
- Conveyors and material handling
- Fans and Blowers
- Agitators
- And other applications requiring precise speed control without a feedback device.



Compact to Fit.

VARIDYNE™ 2 is a compact drive – a compact footprint with space saving features.

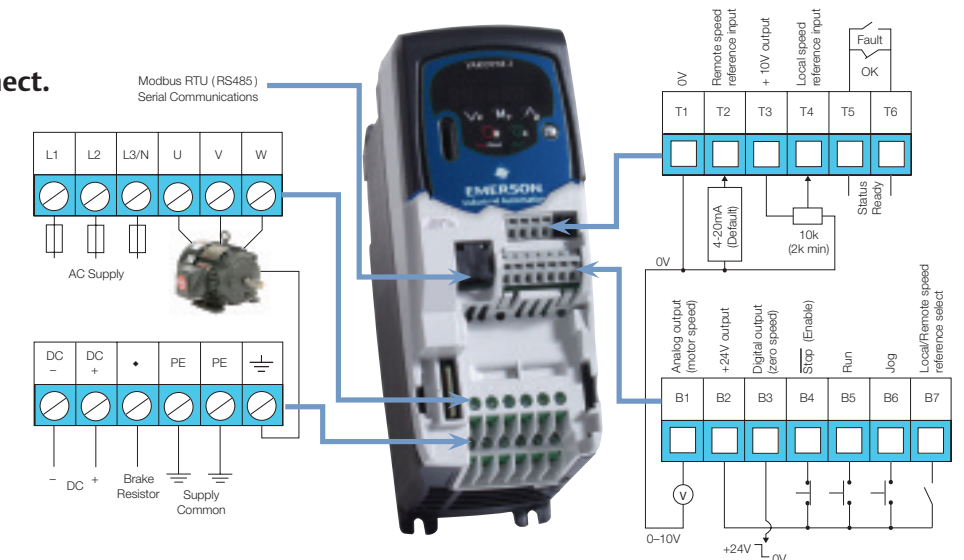
VARIDYNE™ 2 gives you back valuable space with its compact footprint and extra features that can eliminate the need for additional components such as EMC filters.

Power to Perform.

VARIDYNE™ 2 – Reliable and productive with exceptional motor performance, as you would expect from the world's leading motor manufacturer – Emerson Motor Technologies/U.S. Motors.

Emerson Motor Technologies/U.S. Motors® has a longstanding reputation for manufacturing high-quality motors. VARIDYNE™ 2 is designed with the same principles to give you an easy-to-apply, high-performance, open-loop drive for your standard AC motors. Our state-of-the-art VARIDYNE™ 2 drives automatically measure the motor characteristics on power-up – ensuring you get the best motor performance straight out of the box, every time. How could we make it easier?

Quick to Connect.



Simple set up to drive your machine at optimum efficiency

- Automatic no-spin autotune for rapid performance optimization
- 8 preset speeds available
- Keypad access to all parameters – basic and advanced menus
- V/Hz or open loop vector control. Speed or Torque control
- Speed reference input: 0-10V, 0-20 mA, 4-20mA (-10V to +10V SM-I/O Lite option)
- Switching frequency from 3kHz up to 18kHz – quiet motor operation
- Output frequency from 0 to 1500 Hz
- Linear and S type acceleration and deceleration ramps
- Modbus RTU RS485 via RJ-45 connector as standard
- DC injection braking as standard
- Dynamic braking transistor as standard
- Energy savings with dynamic motor flux V/Hz
- Fan and pump optimization with quadratic motor flux V/Hz

Control:

- V/Hz or open loop vector control
- Speed or Torque modes

Protection:

- Intelligent Thermal Management
- Over/Under-voltage
- Phase-loss
- Overload
- Instantaneous Over-current
- Drive Temperature
- Watchdog

Environment

- IP20, NEMA 1 enclosure
- UL Type 1 kit and cover kit options up to Size C
- Ambient temperature -10 °C to 40 °C
- Electromagnetic Immunity complies with EN61800-3, EN61000-6-1 and EN61000-6-2
- Humidity 95% maximum (non-condensing)
- Electromagnetic Emissions complies with EN61800-3 (second environment) as standard. Complies with EN61000-6-3 (residential) and EN61000-6-4 (industrial) generic standards with optional footprint EMC filter

