



Variable Speed Drive CATALOGUE

€3
SERIES

General Purpose Drive
Easy control for all motor types

P2
SERIES

Powerful Performance
Advanced motor control



0.37kW – 160kW
240V – 480V
Single & 3 Phase Input

IP20

IP55

IP66

Quality. Service. Range

PHONE 1300 TECH TOP
www.techtop.com.au



The story of Techttop Australia

A business that's powered by people.

Techtop Australia Pty Ltd, founded by well-respected Directors Rohan Pollard and Jeff Aird, entered a joint venture partnership in 2013 with Shanghai Top Motor Co, the largest manufacturer of aluminium electric motors in China.

In 2015, Jack Gringlas OAM joined the board of Techttop Australia as Chairman, the board comprising these 3 directors have knowledge of the Australian electric motor market spanning back over 40 years.

The combination of a leading motor manufacturer and Australia's most experienced sales team provides our customers with quality products, excellent service & technical knowledge.







Techtop Australia will now form part of a global organisation with Techttop's leading partners in America, Canada, Europe & U.A.E. just to mention a few.




Techtop Australia Pty Ltd, has its head office and primary distribution operation based in Dandenong, an outer eastern suburb of Melbourne.

Since our inception we have opened sales offices and warehouses in every mainland state of Australia and are now the only company that can provide direct representation in these 5 locations; Melbourne, Sydney, Brisbane, Adelaide & Perth. Each of these offices has a local manager that enjoys many years' experience in the industry and is respected by our wide and diverse customer base.

The company's strength is based on it's professional, experienced and enthusiastic staff, who are constantly striving to ensure customer service is held at the forefront of our business.

In addition to the variable speed drive range covered in this catalogue, we are proud to offer the widest range of related products available in the industry today, some of these are detailed below.

-  Varvel Gearboxes
-  Single Stage Helical Gearboxes
-  Stainless Steel Gearboxes
-  Single and Three Phase Motors

-  ECM Variable Speed Motor
-  Stainless Steel Motors
-  Shaded Pole Motors

E3 SERIES

General Purpose Drive

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P2 SERIES

Powerful Performance

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Easy to Use

General Purpose Drive

Focused on ease of use, the E3 Series provides unrivalled simplicity of installation, connection and commissioning, allowing the user to benefit from precise motor control and energy savings within minutes.



Simple Commissioning

With just 14 basic parameters and application macro functions providing rapid set up, the E3 Series minimises start-up time.



Intuitive Keypad Control

Precise digital control at the touch of a button.



Application Macros

Switch between **Industrial**, **Pump & Fan** modes to optimise the E3 Series for your application.

Industrial | Pump | Fan

See **Page 8**

IP20

Up to 30kW

- Easy to use
- Compact & robust

See **Page 6**



Sensorless Vector Control for all Motor Types

IM

IE2 & IE3
Induction
Motors

PM

AC Permanent
Magnet Motors

BLDC

Brushless DC
Motors

SynRM

Synchronous
Reluctance
Motors

Precise and reliable control for
IE2, IE3 & IE4 motors

IP66

Up to 22kW

- Outdoor Rated
- Dust-tight
- Washdown ready


See Page 7



IP66 / NEMA 4X



Key Features

- Internal Category C1 EMC filter
- Internal PI control
- Internal brake chopper
- Dual analogue inputs
- Operates up to 50°C
-  Bluetooth® connectivity
- Option for control of single phase motors

Modbus RTU
CAN

on-board as standard

Internal Category C1 EMC Filter

An internal filter in every E3 Series drive saves cost and time for installation.

Cat C1 according to EN61800-3:2004



IP20 Models

Up to 30kW

Compact, robust and reliable general purpose drive for panel mounting

Simple Installation

DIN rail and keyhole mounting options

Fast Connection

5mm rising clamp terminals with captive screws

Quick Reference

Integrated help card

Operates up to 50°C


Modbus RTU
CANopen

on-board as standard

Optistick Smart

Rapid commissioning tool

Incredibly Easy to Use

- Built in PI control, EMC filter (C1) & brake chopper
- Application macros for industrial, fan and pump operation
-  **Bluetooth** connectivity

Dual analogue inputs

Motor supply connects at base

Controls Multiple Motor Types

- IE2, 3 & 4
- IM, PM, BLDC and SynRM

4 sizes cover global supply ratings

Simply Power Up

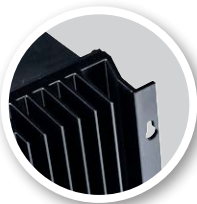
Techtop Australia provides precise motor control and energy savings using the factory settings. Simply power up and the drive can immediately deliver energy savings.

14 basic parameters allow simple adjustment for your application if required, with up to 50 parameters available in total for a highly flexible performance.

IP66 Models

Up to 22kW

Enclosed drives for direct machine mounting, dust-tight and ready for washdown duty



Coated Heatsink as Standard

Ideal for hygiene based operations requiring washdown — such as food and beverage



Switched or non-switched

Conformal coating as standard



- 1 2 x RJ45 ports eliminate the need for a splitter.
- 2 Easily accessible EMC disconnect
- 3 Easy to wire due to the large, accessible chamber and removeable gland plate.

IP66/Nema 4X outdoor rated

Built with tough polycarbonate plastics specifically chosen to withstand degradation by ultra violet (UV), greases, oils and acids. Also robust enough not to be brittle at -20°C.

Dust-Tight Design

Install directly on your processing equipment and be sure of protection from dust and contaminants.

Washdown Ready

With a sealed ABS enclosure and corrosion resistant heatsink, the E3 Series IP66 is ideal for high-pressure washdown applications.

Switched models

Simply wire up the drive, turn the inbuilt potentiometer and the motor will start running — allowing immediate energy savings

Saving energy cannot be easier than this!

Local Speed Potentiometer
Run Reverse / Off / Run Forward Switch
Lockable Mains Disconnect / Isolator

For ultimate ease of use



Application Macros

Switch modes at the touch of a button to optimise Techtop E3 for your application

Single parameter application macro selection



Industrial Mode

Industrial Mode optimises the E3 Series for load characteristics of typical industrial applications.

Applications include:

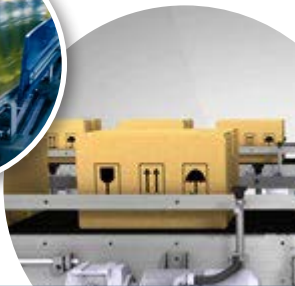
- Conveyors
- Mixers
- Treadmills

Sensorless Vector provides high starting torque and excellent speed regulation

IP20 panel mount units or IP66 for direct machine mounting



Rapid parameter cloning using OPTISTICK Smart



Pump Mode

Pump Mode makes energy efficient pump control easier than ever.

Applications include:

- Dosing Pumps
- Borehole Pumps
- Transfer Pumps
- Swimming Pools
- Spas
- Fountains

- Constant or variable torque
- Internal PI control



Industrial Mode

Fan Mode (inc. fire operation) makes air handling a breeze, ideal for simple HVAC systems.

Applications include:

- Air Handling Units
- Ventilation Fans
- Circulating Fans
- Air Curtains
- Kitchen Extract

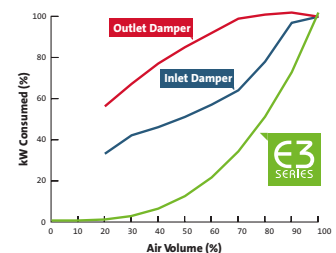


Fire Mode

- High efficiency **variable torque** motor control
- Flying start capability
- Mains loss ride through
- PI control

Instant Power Savings

The graph below shows the incredible efficiency of the E3 Series for controlling airflow compared to traditional damper control methods.



Modbus RTU CAN

on-board as standard

E3 Series Drive Specifications

Input Ratings	Supply Voltage	110 – 115V ± 10% 200 – 240V ± 10% 380 – 480V ± 10%
	Supply Frequency	48 – 62Hz
	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour maximum, evenly spaced
Output Ratings	Output Power	110V 1 Ph Input: 0.5–1.5HP (230V 3 Ph Output) 230V 1 Ph Input: 0.37–4kW (0.5–5HP) 230V 3 Ph Input: 0.37–11kW (0.5–15HP) 400V 3 Ph Input: 0.75–22kW 460V 3 Ph Input: 1–30HP
	Overload Capacity	150% for 60 seconds 175% for 2.5 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
	Acceleration Time	0.01 – 600 seconds
	Deceleration Time	0.01 – 600 seconds
	Typical Efficiency	> 98%
Ambient Conditions	Temperature	Storage: –40 to 60°C Operating: –20 to 50°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL approved Up to 4000m maximum (non UL)
	Humidity	95% Max, non condensing
	Vibration	Conforms to EN61800-5-1
Enclosure	Ingress Protection	IP20, IP66
Programming	Keypad	Built-in keypad as standard Optional remote mountable keypad
	Display	7 Segment LED
	PC	OptiTools Studio
Control Specification	Control Method	Sensorless Vector Speed Control PM Vector Control BLDC Control Synchronous Reluctance
	PWM Frequency	4 – 32kHz Effective
	Stopping Mode	Ramp to stop: User Adjustable 0.1 – 600 secs Coast to stop
	Braking	Motor Flux Braking Built-in braking transistor (not frame size 1)
	Skip Frequency	Single point, user adjustable
	Setpoint Control	Analog Signal 0 to 10 Volts 10 to 0 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA
		Digital Motorised Potentiometer (Keypad) Modbus RTU CANopen EtherNet/IP

Fieldbus	Built-in	CANopen	125–1000 kbps
		Modbus RTU	9.6–115.2 kbps selectable
I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 5mA for Potentiometer	
	Programmable Inputs	4 Total - 2 Digital - 2 Analog / Digital selectable	
	Digital Inputs	8 – 30 Volt DC, internal or external supply Response time < 4ms	
	Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: ± 2% full scale Parameter adjustable scaling and offset	
	Programmable Outputs	2 Total - 1 Analog / Digital - 1 Relay	
	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 6A AC, 5A DC	
Application Features	Fire Mode	PI Control	Internal PI Controller Standby / Sleep Function
		Fire Mode	Bidirectional Selectable Speed Setpoint (Fixed / PI / Analog / Fieldbus)
Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp	
	Data Logging	Logging of data prior to trip for diagnostic purposes: Output Current Drive Temperature DC Bus Voltage	
	Monitoring	Hours Run Meter	
Standards Compliance	Low Voltage Directive	Adjustable speed electrical power drive systems. EMC requirements	
	EMC Directive	2014/30/EU 230V 1Ph. Filtered Units : Cat C1 according to EN61800-3:2004	
	Machinery Directive	2004/108/EC Cat C1 according to EN61800-3:2004	
	Conformance	CE, RCM	



Model Data

E3 IP20

Techtop E3 IP20 Single Phase

1 Ph. Input, 3 Ph. Output, 200-240V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Power Rating (HP)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-120023-1F12	1	2.3	0.37	0.5	1	173 X 83 X 123
TTA-3-120043-1F12	1	4.3	0.75	1	1	173 X 83 X 123
TTA-3-120070-1F12	1	7	1.5	2	1	173 X 83 X 123
TTA-3-220070-1F42	2	7	1.5	2	1.7	221 X 110 X 150
TTA-3-220105-1F42	2	10.5	2.2	3	1.7	221 X 110 X 150

Techtop E3 IP20 Three Phase

3 Ph. Input, 3 Ph. Output, 380-480V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Power Rating (HP)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-140012-3F12	1	1.2	0.37	0.5	1	173 x 83 x 123
TTA-3-140022-3F12	1	2.2	0.75	1	1	173 x 83 x 123
TTA-3-140041-3F12	1	4.1	1.5	2	1	173 x 83 x 123
TTA-3-240041-3F42	2	4.1	1.5	2	1.7	221 x 110 x 150
TTA-3-240058-3F42	2	5.8	2.2	3	1.7	221 x 110 x 150
TTA-3-240095-3F42	2	9.5	4	5	1.7	221 x 110 x 150
TTA-3-340140-3F42	3	14	5.5	7.5	3.2	261 x 131 x 175
TTA-3-340180-3F42	3	18	7.5	10	3.2	261 x 131 x 175
TTA-3-340240-3F42	3	24	11	15	3.2	261 x 131 x 175
TTA-3-440300-3F42	4	30	15	20	9.1	420 x 171 x 212
TTA-3-440390-3F42	4	39	18.5	25	9.1	420 x 171 x 212
TTA-3-440460-3F42	4	46	22	30	9.1	420 x 171 x 212
TTA-3-540610-3F42	5	61	30	40	16.9	486 x 222 x 226
TTA-3-540720-3F42	5	72	37	50	16.9	486 x 222 x 226



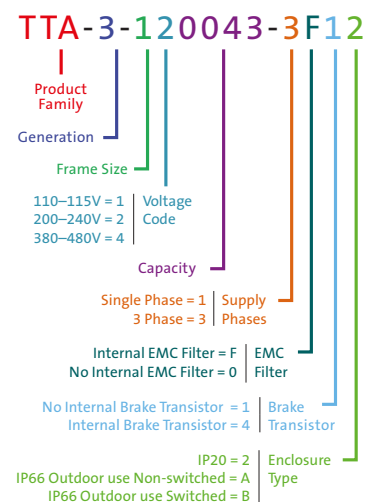
The Techtop E3 IP20 Series is complete with the following features as standard

- 3 preset modes for application - Industrial, Pump and Fan
- Internal C1 category EMC Filter according to EN61800-3:2004
- Simple commissioning - Just 14 basic parameters for rapid set up
- Modbus RTU and Canopen on-board as standard
- Sensorless Vector control for all motor types
- Operates in ambient temperatures up to 50°C
- Bluetooth connectivity
- Compact robust and reliable general purpose drive
- IP20 suitable for panel mounting with many mounting options

1 Year warranty as standard

2 years warranty when purchased with a motor

Model Code Guide:



E3 IP66

Techtop E3 IP66 Single Phase Outdoor - Non Switched

1 Ph. Input, 3 Ph. Output, 200-240V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW) (HP)		Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-120023-1F4A	1	2.3	0.37	0.5	2.2	232 X 161 X 162
TTA-3-120043-1F4A	1	4.3	0.75	1	2.2	232 X 161 X 162
TTA-3-120070-1F4A	1	7	1.5	2	2.2	232 X 161 X 162
TTA-3-220070-1F4A	2	7	1.5	2	3.4	257 X 188 X 182
TTA-3-220105-1F4A	2	10.5	2.2	3	3.4	257 X 188 X 182

Techtop E3 IP66 Single Phase Outdoor - Control Switches + Disconnect

1 Ph. Input, 3 Ph. Output, 200-240V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW) (HP)		Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-120023-1F1B	1	2.3	0.37	0.5	2.3	232 X 161 X 162
TTA-3-120043-1F1B	1	4.3	0.75	1	2.3	232 X 161 X 162
TTA-3-120070-1F1B	1	7	1.5	2	2.3	232 X 161 X 162
TTA-3-220070-1F4B	2	7	1.5	2	3.5	257 X 188 X 182
TTA-3-220105-1F4B	2	10.5	2.2	3	3.5	257 X 188 X 182

Techtop E3 IP66 Three Phase - Non Switched

3 Ph. Input, 3 Ph. Output, 380-480V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW) (HP)		Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-140012-3F1A	1	1.2	0.37	0.5	2.2	232 x 161 x 162
TTA-3-140022-3F1A	1	2.2	0.75	1	2.2	232 x 161 x 162
TTA-3-140041-3F1A	1	4.1	1.5	2	2.2	232 x 161 x 162
TTA-3-240041-3F4A	2	4.1	1.5	2	3.4	257 x 188 x 182
TTA-3-240058-3F4A	2	5.8	2.2	3	3.4	257 x 188 x 182
TTA-3-240095-3F4A	2	9.5	4	5	3.4	257 x 188 x 182
TTA-3-340140-3F4A	3	14	5.5	7.5	6.6	310 x 210.5 x 238
TTA-3-340180-3F4A	3	18	7.5	10	6.6	310 x 210.5 x 238
TTA-3-340240-3F4A	3	24	11	15	6.6	310 x 210.5 x 238
TTA-3-440300-3F4A	4	30	15	20	10.7	360 x 240 x 275
TTA-3-440390-3F4A	4	39	18.5	25	10.7	360 x 240 x 275
TTA-3-440460-3F4A	4	46	22	30	10.7	360 x 240 x 275

Techtop E3 IP66 Three Phase - Switched

3 Ph. Input, 3 Ph. Output, 380-480V, With Internal EMC Filter

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW) (HP)		Weight (Kg)	Dimensions (mm) H x W x D
TTA-3-140012-3F1B	1	1.2	0.37	0.5	2.3	232 x 161 x 162
TTA-3-140022-3F1B	1	2.2	0.75	1	2.3	232 x 161 x 162
TTA-3-140041-3F1B	1	4.1	1.5	2	2.3	232 x 161 x 162
TTA-3-240041-3F4B	2	4.1	1.5	2	3.5	257 x 188 x 182
TTA-3-240058-3F4B	2	5.8	2.2	3	3.5	257 x 188 x 182
TTA-3-240095-3F4B	2	9.5	4	5	3.5	257 x 188 x 182
TTA-3-340140-3F4B	3	14	5.5	7.5	6.6	310 x 210.5 x 238
TTA-3-340180-3F4B	3	18	7.5	10	6.6	310 x 210.5 x 238
TTA-3-340240-3F4B	3	24	11	15	6.6	310 x 210.5 x 238
TTA-3-440300-3F4B	4	30	15	20	10.7	360 x 240 x 275
TTA-3-440390-3F4B	4	39	18.5	25	10.7	360 x 240 x 275
TTA-3-440460-3F4B	4	46	22	30	10.7	360 x 240 x 275



The Techtop E3 IP66 Series is complete with the following features as standard

- 3 preset modes for application - Industrial, Pump and Fan.
- Internal C1 category EMC Filter according to EN61800-3:2004
- Simple commissioning - Just 14 basic parameters for rapid set up
- Modbus RTU and Canopen on-board as standard
- Sensorless Vector control for all motor types
- Operates in ambient temperatures up to 50°C
- Bluetooth connectivity
- Compact robust and reliable general purpose drive
- IP66 suitable for mounting externally with many mounting options

1 Year warranty as standard

2 years warranty when purchased with a motor

Options & Accessories

Optistick Smart



Optistick Smart TTA-3-STICK-IN
Rapid Commissioning Tool

- Allows copying, backup and restore of drive parameters
- Provides Bluetooth interface to a PC running OptiTools Studio or the OptiTools Mobile app on a smartphone
- Onboard NFC (Near Field Communication) for rapid data transfer

Remote Key pads



Optipad TTA-3-OPPAD-IN
Remote Keypad & TFT Display

Optiport 2 TTA-2-OPORT-IN
Remote Keypad & LED Display

RJ45 Accessories



Ideal for simple and fast connection of Modbus RTU/CAN networks

- | | |
|---------------------|--------------------------------------|
| TTA-J4505-IN | RJ45 Cable 0.5m |
| TTA-J4510-IN | RJ45 Cable 1.0m |
| TTA-J4530-IN | RJ45 Cable 3.0m |
| TTA-J455P-IN | RS485 3 Way Data Cable Splitter RJ45 |

EtherNet Module



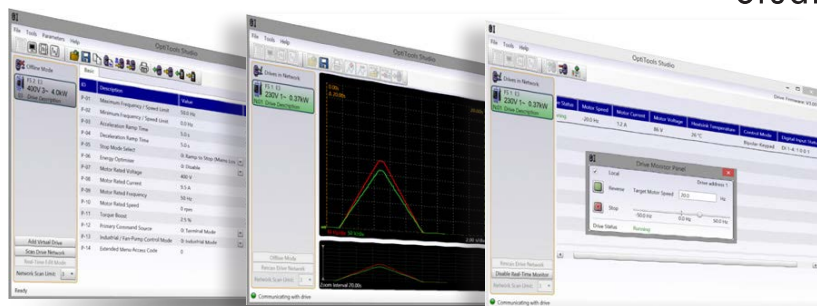
EtherNet Module TTA-2-ETHEG-IN

- ODVA compliant EtherNet/IP Modbus Translator Device
- Compatible with all drive platforms: P2, E3 & Eco
- Integrated network switch: simplifying network architecture
- Compatible with RSLogix and CoDeSys PLCs

External EMC Filters, Input Chokes & Output Filters are available



OptiTools Studio



Drive commissioning and parameter backup

- Real-time parameter editing
- Drive network communication
- Parameter upload, download and storage
- Simple PLC function programming
- Real-time scope function and data logging
- Real-time data monitoring

Compatible with:
Windows Vista & Windows 7, Windows 8, Windows 8.1 & Windows 10

Powerful Performance

World leading control for the latest generation of permanent magnet and standard induction motors

Conveyer Systems Processing Plants
Manufacturing Plastics Rubber Chemical
Pumping Machine Tools Elevators Cranes



World Leading Motor Control

Designed for fast installation and commissioning, P2 Series provides the most cost effective solution for industry.

All P2 Series units provide 150% overload for 60 seconds as standard, ensuring each drive is suitable for Heavy Duty applications, whilst the IP55 enclosed versions ensure the drive is tough enough to survive in industrial environments.

Extensive I/O and communications interface capabilities ensure the drive can be integrated quickly and efficiently into a wide variety of control systems with the minimum commissioning time, ensuring rapid start up. Invertek's simple parameter structure, and carefully selected factory parameter settings ensure that commissioning time is kept to a minimum.



Compliant with international standards.
Manufactured in the UK.

150% overload for 60 seconds



IP20

Up to 250kW



IP55

Up to 160kW



IP66

Up to 30kW

Advanced Motor Control

The P2 Series has been uniquely developed to allow a wide range of different motor types to be used, with only parameter changes being required. This technology allows the same drive to be used in a wide range of applications, allowing OEMs and end user alike to take advantage of the energy saving provided by using the latest motor technologies.

AC Induction Motors

The majority of AC motors in use today around the world are standard induction motors. These motors are relatively low cost, readily available and provide good performance with long service life. With the ever increasing focus on energy efficiency, motor manufacturers have refined and improved their designs in recent years.

P2 Series has been developed to provide optimum control and maximum efficiency when operating with older motors designs, or newer high efficiency designs.

Operation can be in simple V/F control mode or in High Performance Third Generation Vector Mode, which provides up to 200% torque from zero speed without requiring an encoder.

Permanent Magnet AC Motors

Permanent magnet AC motors provide improved efficiency compared to standard induction motors. Using permanent magnets in the motor construction eliminates the need for any magnetising current, reducing electrical losses. PM motors have been used for many years in high performance applications, however this has always required the use of a feedback device, such as a resolver or encoder. P2 Series has been designed to operate with AC PM motors without requiring any feedback device, allowing them to be used for their energy efficiency benefits without incurring extra cost and complexity in applications which do not require position feedback.

Brushless DC Motors

BLDC motors are similar to AC PM motors, however the design requires a slightly different control method to optimise the performance. P2 Series has the flexibility to control this type of motor, requiring only simple parameter changes. This provides much greater flexibility for OEMs, allowing P2 Series to be used in a variety of applications, with various motor types.

Synchronous Reluctance Motors

Synchronous Reluctance Motors (SynRM), not to be confused with Switched Reluctance Motors, share a similar stator construction to standard induction motors, however the rotor is substantially different, in order to improve the overall efficiency of the motor. SynRM motors are ideally suited to variable torque applications.

P2 Series can control synchronous reluctance motors, allowing the energy saving benefits to be realised.

At a Glance...

High performance, excellent usability and flexible to meet the needs of your application

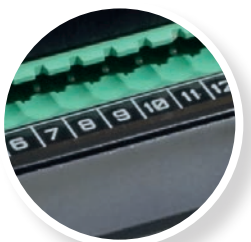
**Keyhole
Mounts for fast
installation**

**Integrated
Keypad &
Display**



IP55 / NEMA 12

**Integrated
EMC Filter**



**Pluggable Control
Terminals**



**High Quality
Long-life Fans**

**Integral
Brake
Transistor**



**Integrated Cable
Management**



Contactor-style Power Wiring Arrangement



Keyhole Mounts for fast installation



DIN Rail Mount

Modbus RTU and CANopen on board as standard



Pluggable Modules for I/O, Encoder, Alternative Fieldbus

Modbus CANopen



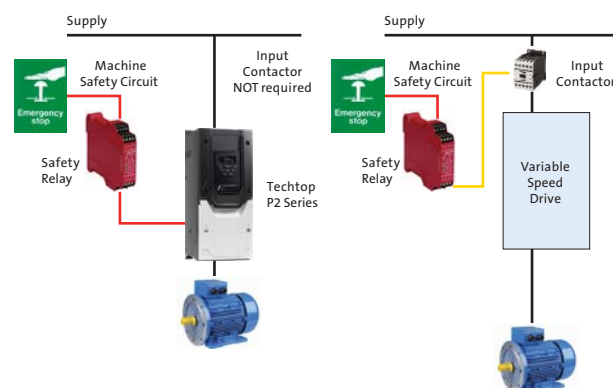
Safe Torque Off (provided as standard)

With

Without

The P2 Series features a safe torque off function to allow simple integration into machine critical safety circuits.

- Simple machine design reduces component costs, saves panel space and minimises installation time
- Faster shut down and reset procedures reduce system maintenance time
- Better safety standard compared to mechanical solution
- Better motor connection. Single cable with no interruption.



Applications

High performance, accurate motor control for even the most demanding of applications

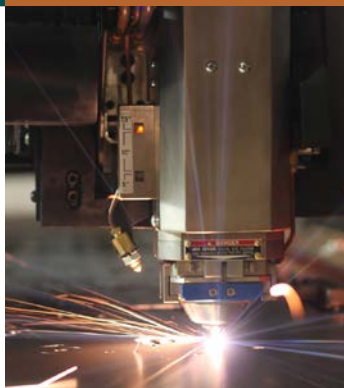


Mining & Quarrying



- Feed conveyers
- Crushers
- Cranes

Metals & Processing



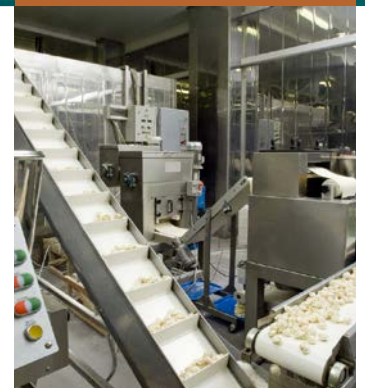
- Grinding
- Cutting
- Polishing
- Drilling
- Rolling

Rubber & Plastics



- Extruders
- Moulding
- Mixers
- Winding

Food & Beverage



- Conveyers
- Pumps
- Mixers
- Palletisers

Powerful, versatile
and easy to use

Model Data

P2 IP20

Techtop P2 IP20 Three Phase

3 Ph. Input, 3 Ph. Output, 380-480V, EMC Filter, Brake Chopper, TFT Display

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-24075-3KF42-MN	2	2.2	0.75	1.8	221 x 110 x 185
TTA-2-24150-3KF42-MN	2	4.1	1.5	1.8	221 x 110 x 185
TTA-2-24220-3KF42-MN	2	5.8	2.2	1.8	221 x 110 x 185
TTA-2-24400-3KF42-MN	2	9.5	4	1.8	221 x 110 x 185
TTA-2-34055-3KF42-MN	3	14	5.5	3.5	261 x 131 x 205
TTA-2-34075-3KF42-MN	3	18	7.5	3.5	261 x 131 x 205

IP20
Cabinet Mount



P2 IP55

Techtop P2 IP55 Three Phase

3 Ph. Input, 3 Ph. Output, 380-480V, EMC Filter, Brake Chopper, TFT Display

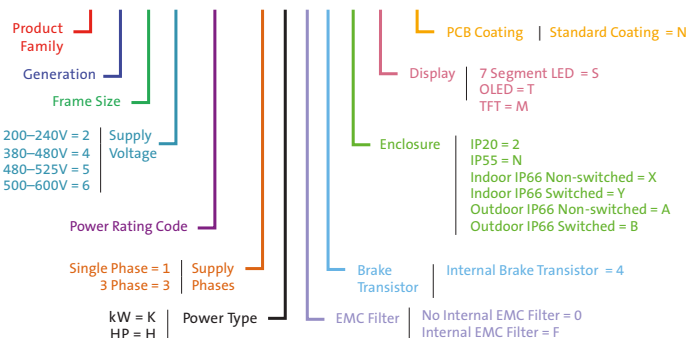
Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-44110-3KF4N-MN	4	24	11	11.5	450 x 171 x 252
TTA-2-44150-3KF4N-MN	4	30	15	11.5	450 x 171 x 252
TTA-2-44185-3KF4N-MN	4	39	18.5	11.5	450 x 171 x 252
TTA-2-44220-3KF4N-MN	4	46	22	11.5	450 x 171 x 252
TTA-2-54300-3KF4N-MN	5	61	30	23	540 x 235 x 270
TTA-2-54370-3KF4N-MN	5	72	37	23	540 x 235 x 270
TTA-2-64045-3KF4N-MN	6	90	45	55	865 x 330 x 330
TTA-2-64055-3KF4N-MN	6	110	55	55	865 x 330 x 330
TTA-2-64075-3KF4N-MN	6	150	75	55	865 x 330 x 330
TTA-2-64090-3KF4N-MN	6	180	90	55	865 x 330 x 330
TTA-2-74110-3KF4N-MN	7	202	110	89	1280 x 330 x 360
TTA-2-74132-3KF4N-MN	7	240	132	89	1280 x 330 x 360
TTA-2-74160-3KF4N-MN	7	302	160	89	1280 x 330 x 360

IP55
With
TFT Display



Model Code Guide

TTA-2-2 2 075-1K F4 #-# N



P2 IP66

Techtop P2 IP66 Single Phase Outdoor - Non-Switched

1 Ph. Input, 3 Ph. Output, 200-240V, EMC Filter, Brake Chopper, TFT Display

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-22075-1KF4A-MN	2	4.3	0.75	4.3	257 x 188 x 239
TTA-2-22150-1KF4A-MN	2	7	1.5	4.3	257 x 188 x 239
TTA-2-22220-1KF4A-MN	2	10.5	2.2	4.3	257 x 188 x 239

Techtop P2 IP66 Three Phase Outdoor - Non-Switched

3Ph. Input, 3Ph. Output, 380-480V, EMC Filter, Brake Chopper, TFT Display

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-24075-3KF4A-MN	2	2.2	0.75	4.3	257 x 188 x 239
TTA-2-24150-3KF4A-MN	2	4.1	1.5	4.3	257 x 188 x 239
TTA-2-24220-3KF4A-MN	2	5.8	2.2	4.3	257 x 188 x 239
TTA-2-24400-3KF4A-MN	2	9.5	4	4.3	257 x 188 x 239
TTA-2-34055-3KF4A-MN	3	14	5.5	7	310 x 211 x 266
TTA-2-34075-3KF4A-MN	3	18	7.5	7	310 x 211 x 266
TTA-2-34110-3KF4A-MN	3	24	11	7	310 x 211 x 266
TTA-2-44150-3KF4A-MN	4	30	15	9.5	360 x 240 x 271
TTA-2-44185-3KF4A-MN	4	39	18.5	9.5	360 x 240 x 271
TTA-2-44220-3KF4A-MN	4	46	22	9.5	360 x 240 x 271



IP66
Outdoor
Non-Switched

Techtop P2 IP66 Single Phase Outdoor - Switched

1 Ph. Input, 3 Ph. Output, 200-240V, EMC Filter, Brake Chopper, TFT Display

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-22075-1KF4B-MN	2	4.3	0.75	4.4	257 x 188 x 239
TTA-2-22150-1KF4B-MN	2	7	1.5	4.4	257 x 188 x 239
TTA-2-22220-1KF4B-MN	2	10.5	2.2	4.4	257 x 188 x 239

Techtop P2 IP66 Three Phase Outdoor - Switched

3Ph. Input, 3Ph. Output, 380-480V, EMC Filter, Brake Chopper, TFT Display

Branded Part Number	Frame Size	Output Current (Amps)	Power Rating (kW)	Weight (Kg)	Dimensions (mm) H x W x D
TTA-2-24075-3KF4B-MN	2	2.2	0.75	4.4	257 x 188 x 239
TTA-2-24150-3KF4B-MN	2	4.1	1.5	4.4	257 x 188 x 239
TTA-2-24220-3KF4B-MN	2	5.8	2.2	4.4	257 x 188 x 239
TTA-2-24400-3KF4B-MN	2	9.5	4	4.4	257 x 188 x 239
TTA-2-34055-3KF4B-MN	3	14	5.5	7.1	310 x 211 x 266
TTA-2-34075-3KF4B-MN	3	18	7.5	7.1	310 x 211 x 266
TTA-2-34110-3KF4B-MN	3	24	11	7.1	310 x 211 x 266
TTA-2-44150-3KF4B-MN	4	30	15	9.5	360 x 240 x 271
TTA-2-44185-3KF4B-MN	4	39	18.5	9.5	360 x 240 x 271
TTA-2-44220-3KF4B-MN	4	46	22	9.5	360 x 240 x 271



IP66
Outdoor
Switched

P2 Series Drive Specifications

Input Ratings	Supply Voltage	200 – 240V ± 10% 380 – 480V ± 10%
	Supply Frequency	48 – 62Hz
	Displacement Power Factor	> 0.98
	Phase Imbalance	3% Maximum allowed
	Inrush Current	< rated current
	Power Cycles	120 per hour maximum, evenly spaced

Output Ratings	Output Power	230V 1Ph. Input: 0.75–2.2kW (1–3HP) 230V 3Ph. Input: 0.75–75kW (1–100HP) 400V 3Ph. Input: 0.75–250kW 460V 3Ph. Input: 1–350HP 575V 3Ph. Input: 0.75–110kW (1–150HP)
	Overload Capacity	150% for 60 seconds
	Output Frequency	0 – 500Hz, 0.1Hz resolution
	Acceleration Time	0.01 – 600 seconds
	Deceleration Time	0.01 – 600 seconds
	Typical Efficiency	> 98%

Ambient Conditions	Temperature	Storage: –40 to 60°C Operating: –10 to 50°C
	Altitude	Up to 1000m ASL without derating Up to 2000m maximum UL Approved Up to 4000m maximum (non UL)
	Humidity	95% Max, non condensing
	Vibration	Conforms to IEC 60068-2-6 Sinusoidal Vibration 10 - 57Hz @ 0.075mm Pk 57 - 150Hz @ 1g Pk

Enclosure	Ingress Protection	IP20, IP55, IP66
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Programming	Keypad	Built-in keypad as standard Optional remote mountable keypad
	Display	Built-in multi language text display (IP55 & IP66) 7 Segment LED (IP20)
	PC	OptiTools Studio

Control Specification	Control Method	V/F Voltage Vector Energy Optimised V/F 3GV Sensorless Vector Speed Control 3GV Sensorless Vector Torque Control Closed Loop (Encoder) Speed Control Closed Loop (Encoder) Torque Control PM Vector Control BLDC Control Synchronous Reluctance
	PWM Frequency	4 – 32kHz Effective
	Stopping Mode	Ramp to stop: User Adjustable 0.1 – 600 secs Coast to stop
	Braking	Motor Flux Braking Built-in Braking Transistor
	Skip Frequency	Single point, user adjustable
	Setpoint Control	Analog Signal 0 to 10 Volts 10 to 0 Volts –10 to +10 Volts 0 to 20mA 20 to 0mA 4 to 20mA 20 to 4mA PTC
		Digital Motorised Potentiometer (Keypad & Terminal) Modbus RTU CANopen

Fieldbus	Built-in	CANopen 125–1000 kbps
	Modbus RTU	9.6 - 115.2 kbps selectable 8N1, 8N2, 8E1, 8O1
Optional	Other	PROFIBUS DP (DPV1) PROFINET IO DeviceNet EtherNet/IP EtherCAT Modbus TCP

I/O Specification	Power Supply	24 Volt DC, 100mA, Short Circuit Protected 10 Volt DC, 10mA for Potentiometer
	Programmable Inputs	5 Total as standard (Optional additional 3) - 3 Digital (Optional additional 3) - 2 Analog / Digital Selectable 5 Digital With CAN IO Option
	Digital Inputs	Opto - Isolated 8 – 30 Volt DC, internal or external supply Response time < 4ms
	Analog Inputs	Resolution: 12 bits Response time: < 4ms Accuracy: < 1% full scale Parameter adjustable scaling and offset
	PTC Input	Motor PTC / Thermistor Input Trip Level : 3kΩ
	Programmable Outputs	7 Total (Optional additional 3) - 2 Analog / Digital - 2 Relays (Optional additional 3) 3 With CAN IO Option Module
	Relay Outputs	Maximum Voltage: 250 VAC, 30 VDC Switching Current Capacity: 5A AC , 5A DC
	Analog Outputs	0 to 10 Volt 0 to 20mA 4 to 20mA

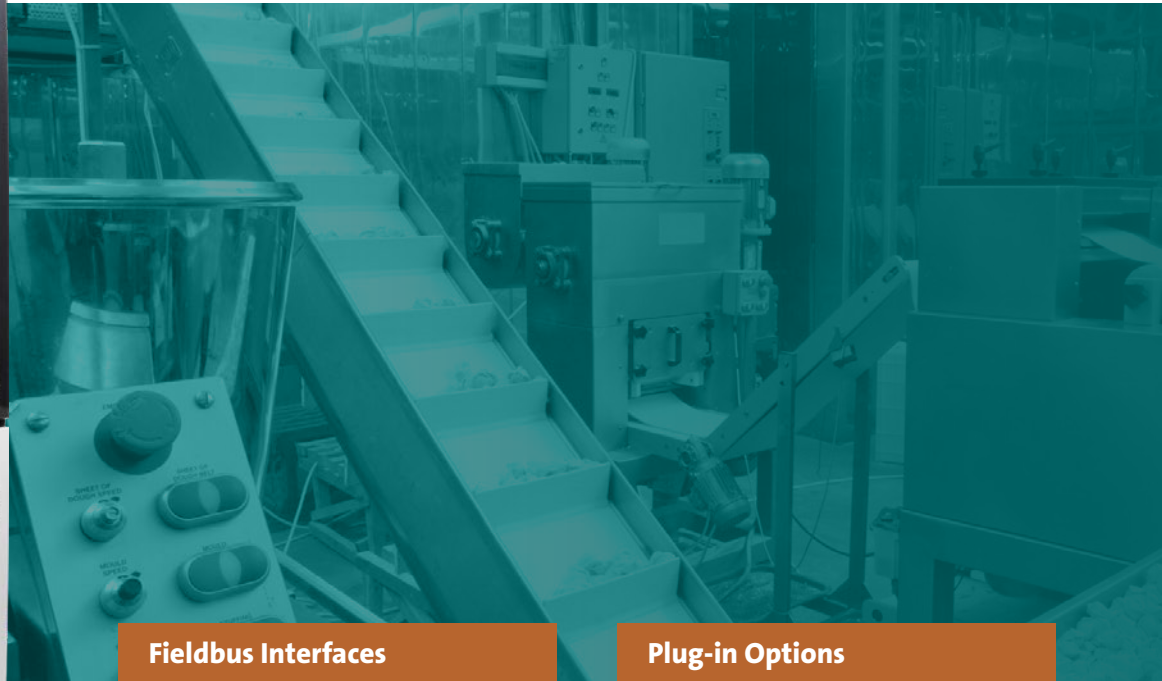
Application Features	PID Control	Internal PID Controller Multi Setpoint Select Standby / Sleep Mode Boost Function
	Hoist Mode	Dedicated Hoist Mode Motor Holding Brake Pre-Torque & Control Over Limit Protection

Maintenance & Diagnostics	Fault Memory	Last 4 Trips stored with time stamp
	Data Logging	Logging of data prior to trip for diagnostic purposes: - Output Current - Drive Temperature - DC Bus Voltage Plus more in Optitools
	Maintenance Indicator	Maintenance Indicator with user adjustable maintenance interval Onboard service life monitoring
	Monitoring	Hours Run Meter Resettable & Non Resettable kWh meters Cooling Fan Run Time

Standards Compliance	Low Voltage Directive	2014/35/EU
	EMC Directive	2014/30/EU
	Additional Conformance	UL, cUL, EAC, RCM
	Marine Certification	DNV Type Approval
	Environmental Conditions	Designed to meet IEC 60721-3-3, in operation: IP20 Drives: 3S2/3C2 IP55 & 66 Drives: 3S3/3C3

Options & Accessories

Installation options, plug-in modules and commissioning tools



Fieldbus Interfaces

Plug-in Options

Modbus RTU and CANopen on board as standard

For additional communication interfaces or functionality a range of plug-in modules is available:



Profibus DP
TTA-2-PROFB-IN



DeviceNet
TTA-2-DEVNT-IN



Ethernet IP
TTA-2-ETHNT-IN



Modbus TCP
TTA-2-MODIP-IN



Profinet
TTA-2-PFNET-IN



EtherCat
TTA-2-ETCAT-IN



Encoder Feedback
TTA-2-ENCOD-IN (5 Volt) TTA-2-ENCHT-IN (15 – 30 Volt)

Closed loop encoder feedback, compatible with a wide range of incremental encoders

Extended I/O
TTA-2-EXTIO-IN

- Additional 3 Digital Inputs
- Additional Relay Output

Extended Relay
TTA-2-CASCD-IN

Additional 3 Relay Outputs:

- Relay 3 – Drive Healthy Indication
- Relay 4 – Drive Fault Indication
- Relay 5 – Drive Running Indication

Functions are programmable / adjustable

Installation & Peripheral Options

A range of external EMC Filters, Brake Resistors, Input Chokes and Output Filters are available, to suit all installation requirements

Optistick Smart

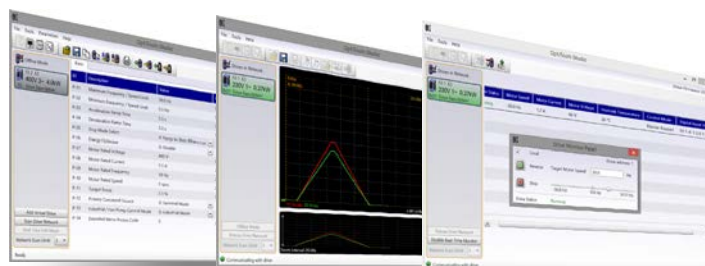


Rapid Commissioning Tool

- Allows copying, backup and restore of drive parameters
- Provides Bluetooth interface to a PC running OptiTools Studio or the OptiTools Mobile app on a smartphone
- Onboard NFC (Near Field communication) for rapid data transfer

TTA-3-STICK-IN

OptiTools Studio



Powerful PC Software

Drive commissioning and parameter backup

- Real-time parameter editing
- Drive network communication
- Parameter upload, download and storage
- Simple PLC function programming
- Real-time scope function and data logging
- Real-time data monitoring

Compatible with:

Windows Vista
Windows 7
Windows 8
Windows 8.1
Windows 10

[illegible]



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