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**CONTROL
TECHNIQUES**



ELEVATOR E300

DEDICATED DRIVES FOR CLASS-LEADING RIDE COMFORT
SPECIALIST DRIVE

DRIVE OBSESSED

ELEVATOR DRIVE E300

SUPPORT RIGHT HERE, RIGHT NOW

Whether you want strong support throughout a project or like to be reassured someone can help if necessary, we provide the support you need.

Our worldwide network of specialists will work with you to get the best out of your application.

Decades of specialist expertise

During our 45 years' of experience developing drives, we've provided superb ride comfort in over 3 million elevators worldwide. Our latest dedicated product line takes customer expectations to new heights.

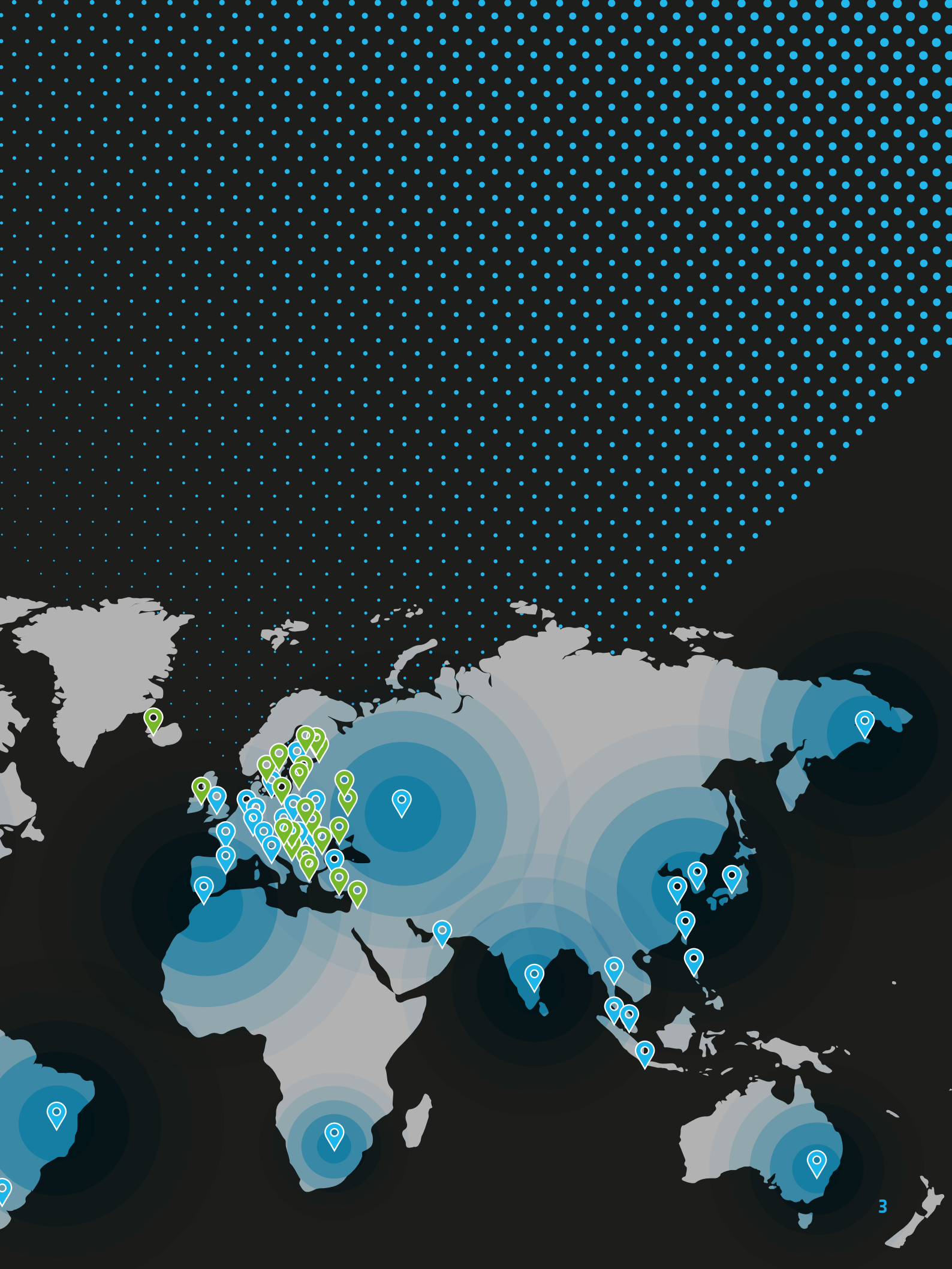
A world of experience

With us, you don't just get the benefits of a local agent but also of a global business with shared knowledge of drive applications across every industry. We also have a central Engineering and Design department, 25+ Automation Centers, and the Nidec network of over 230 companies.

If it moves and spins, we've got you covered.

 Drive sales, technical support, repair and application expertise

 Country Partners



ANY SIZE SOLUTIONS

YOUR TOP CHOICE FOR EVERY PROJECT



25+ Automation Centers

Providing outstanding customer support for any product or service requirement.



5 Manufacturing Sites

Producing a comprehensive range of products, optimised for specific customer needs.



Unparalleled Performance

Control Techniques drives are the go to product in modern elevator systems around the globe.



Drives you can rely on

Designed and tested to offer enduring reliability regardless of traffic requirements or installation preference.

Our elevator drive solutions work for any size of building. Whether it's a small residential building or a luxury high rise, new build or modernization projects, we make every step of the process as easy as possible from product selection to installation, setup and service.



A LEVEL ABOVE THROUGHOUT THE LIFETIME OF YOUR APPLICATION

Freedom to design

Broad range, compact form factor

A full range of some of the smallest drives in the industry per kW rating, for all elevator applications, giving flexibility without constraints.

Match any control interface

Analogue speed reference, digital I/O control, comms control, digital communications control (CANopen, DCP & Ethernet).

Encoder range

Flexible encoder interface supporting 16 different encoder types without the need for additional interface cards. Ranging from incremental to absolute encoders, and absolute comms encoders.

Dynamic braking

All drives are fitted with a dynamic braking transistor as standard.

Simple UPS connection

The easy connectivity ensures optimum backup and rescue operation.

Quick setup

Elevator specific menu structure

Easily make adjustments to drive settings, even without having the manual at hand.

Static autotune

Encoder offset detection & optimum current loop configuration without the need to lift the brake or de-rope the system.

Flexible drive mounting

Multiple mounting options available to optimise enclosure space.

Pluggable drive terminals

Control terminal connections are pluggable across the full range and biased to ensure correct connection. Supply and motor power terminal connections are pluggable up to 22 kW.

Easy optimisation

Keypad with backlit LCD display

The Remote Keypad RTC provides clear parameter descriptions and units. All laid out in a logical sequence to support a rapid and effortless system start up.



PC tools

The advanced graphic interface lets you fine tune your elevator system with just a few clicks.

Parameter storage & cloning

Quickly back up drive configurations to an SD Card or Smartcard, or use the Elevator Connect PC tool.

Diagnostics

The simple trip code system makes it easy to diagnose drive errors. The last 10 trip codes are recorded within the drive to aid troubleshooting.

With the Remote Keypad RTC attached, the diagnostic records also receive time and date stamps as they are generated.

Class-leading performance and maintenance support

Silent operation

Eliminate unwanted sounds using high switching frequencies and intelligent thermal design. In addition, cooling fans are set to only switch on when required by the power circuits.

Enhanced data logger

All drives have a built in data logger that can monitor any parameter, recording events such as drive trips. This can be written onto an SD Card or retrieved by the elevator controller via the communications link.

Travel counter

The built in travel counter helps keep track of rope lifetime when plastic ropes are used in the elevator system. The drive warns when critical thresholds have been reached, and maintenance is necessary.

Sleep mode

Turns off non-essential circuits to minimise energy consumption. Sleep mode can be initiated from the elevator controller.

Blocked cabin release function

The release blocked cabin control will release the elevator's safety gear when it has been deployed, and helps return the blocked cabin to normal operation. This removes the need to climb into the elevator shaft to release the safety gear.

ELEVATOR DRIVE E300

READY FOR THE FUTURE

Control Techniques continually work with customers, user groups, and legislators around the globe.

We keep you ahead of what's coming up on the horizon with pre-engineered features already built-in.

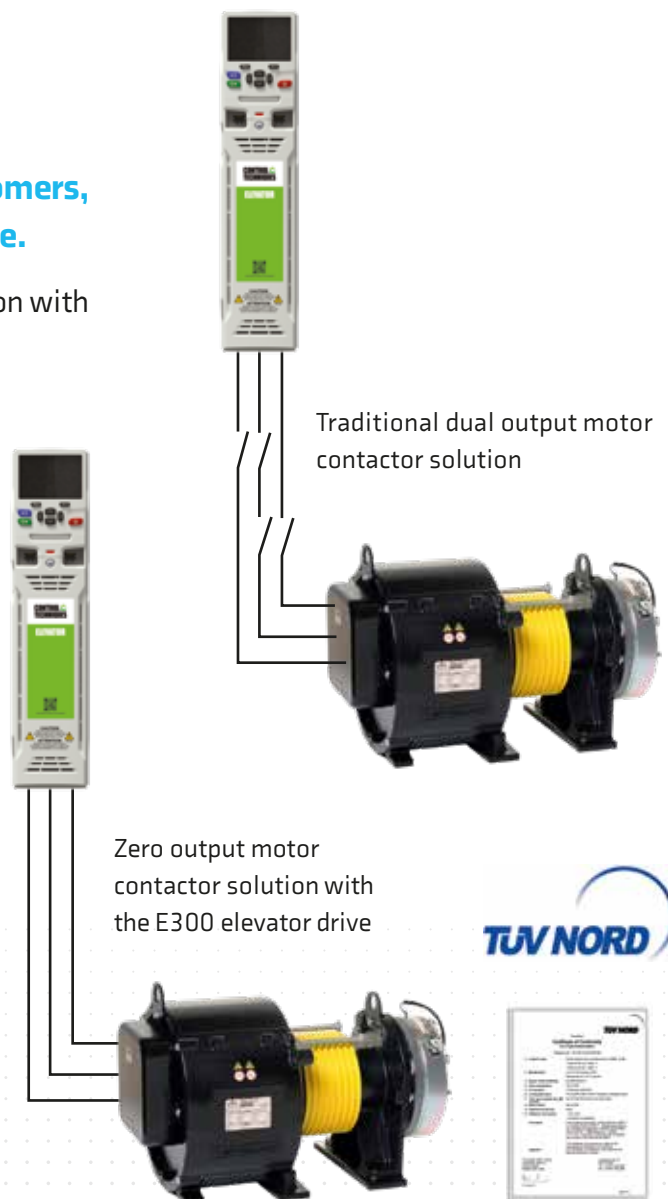
Contactorless operation

Control Techniques' drive range provides contactorless operation in elevator applications.

Our EN81-20, EN81-50 TÜV certified Safe Torque Off (STO) function provides a highly dependable method for preventing the motor from being driven. This removes the need for both output motor contactors.

The benefits of switching to a contactorless solution include:

- Reduced EMC issues
- Reduced acoustic noise
- Improved system reliability
- Simplified electrical installation
- Lower system costs
- Minimised cabinet space allowing machine room-less installation





Brake contact monitoring

Above all else, safety is the number one priority in any elevator application. We are rigorous to achieve the highest attainable safety levels, and assist our partners in doing the same.

Control Techniques' elevator drives E300 come with Brake Contact Monitoring (BCM), an advanced feature set that improves overall system safety and supports the elevator system to meet the requirements of EN81-20, EN81-50 for Unintended Car Movement (UCM).

Our TÜV certified solution provides a flexible and simple addition to any existing or new project, managing brake contact feedback for motors with one to four motor brakes.



TÜV certified Brake Contact Monitoring functions on the elevator drive E300

STAIR-LESS

CLASS LEADING RIDE COMFORT.

Performance guaranteed

Ride experience is the true test of quality in the world of elevators. Thanks to our unique motor control algorithm and microprocessor technology, it's what we do best. We reduce travel times and get the smoothest car movement possible by using optimum start sequencing combined with our accurate direct-to-floor positioning.

Our ultra-fast current loop guarantees vibration-free motor control with either standard AC induction motors or high efficiency permanent magnet machines.

Right to remain silent

Sound also plays an important role in our perception of quality. Because we use intelligent thermal design in our drives, the fans only run when the circuits require additional cooling which cuts down on unwanted noise making our drives run silently.

Switch to a zero output motor contactor solution to further reduce acoustic noise across the entire elevator system.

Hassle-free installation

Fortunately, the need for lifting brakes or de-roping systems is long gone.

Our static autotune algorithms do all the hard work, achieving optimum current loop configuration without getting your hands dirty.

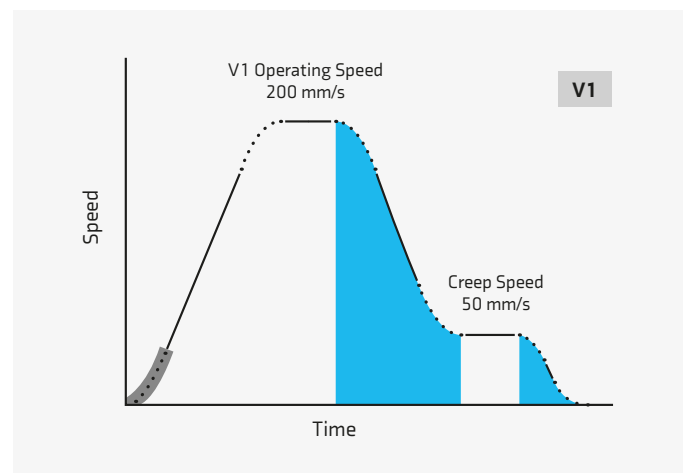
Rapid set-up and adjustment

Setup is straightforward whether you're highly experienced in working with our drives or are brand new to them. The menu structure is designed with elevator engineers in mind so all the settings are where you'd expect them and described using familiar language.

Start with the top level menu to quickly access all frequently used functions. You can also go deeper and fine-tune the drive to your specific needs. Make all adjustments on a bright backlit LCD keypad.

Visually pleasing

Optimising your system is easy and more pleasing to the eyes than ever with the advanced graphic interface of our PC tools. Hover over to highlight and fine-tune any part of the high resolution multi-step curve. Once finished, simply save and clone parameter sets to transfer between drives and devices.



ELEVATOR DRIVE E300

SAY GOODBYE TO DOWNTIME

With over 45 years of drive knowledge, Control Techniques know how to make reliable solutions designed to keep applications running.

To the rescue

Features like the blocked cabin release function on the E300 cut maintenance time and risk. It removes the need to climb into the shaft by assisting in releasing the cabin remotely after the safety gear has been deployed.

Sizing for a contingency plan can be complex and costly. Our drives allow for a fully flexible DC operating voltage range, from nominal down to 24 Vdc, supporting UPS and battery operation.

The drive also provides a load direction signal, ensuring optimum rescue operation.

A built-in maximum power control function limits the power drawn during rescue based on the size of the UPS. This keeps your backup solution reliable and cost effective.

Stay in tune

The E300's built-in data logger can monitor any drive parameter, and it's fully user configurable. It allows up to 4 user selected parameters to be logged at the same time.

That means, for example, you can log the speed reference, speed feedback, current and I/O sequence for every journey. If a fault occurs, it's easily traced and sorted out with minimum downtime.

Get time and date stamping with the real-time clock on the Remote Keypad RTC. Then trip log data files can be automatically written to an on-board SD Card or Smartcard, or retrieved by the elevator controller.



Robust and reliable

We protect our drives with conformal coating for increased resilience, even in harsh environments. Meanwhile other drives may face premature failure and shortened service life.

All E300 drives also offer phase loss detection on both the input and output. This safeguards components, increases system lifetime, and helps avoid unnecessary downtime.



Quickly diagnose faults

You can also download our Diagnostics Tool app. Available for Apple, Android and Windows operating systems. More info at:
controltechniques.com/mobile-applications



*For Microsoft users, please note that this mobile app operates with Windows 10 only.

Tried-and-true

We can ensure the highest level of performance no matter how the elevator system is configured. This is because our E300 drives have been extensively tested with a range of elevator motors and controller technologies at the UK National Lift Tower.

The National Lift Tower is an independent 127 m (418 ft) research and development facility in Northampton, England. There are six lift shafts of different heights and speeds including a high speed shaft with a travel of 100 m and a theoretical maximum speed of 10 m/s.

nationallifttower.co.uk

Easy click-in keypad connection

Dedicated elevator keypad, providing:

- Easy-to-use menu and parameter structure.
- Local and remote mounting.
- Real-time clock.



Power on / Drive status LED

Single screw removable cover

3 x System Integration (SI) module slots for communications, I/O, additional feedback devices

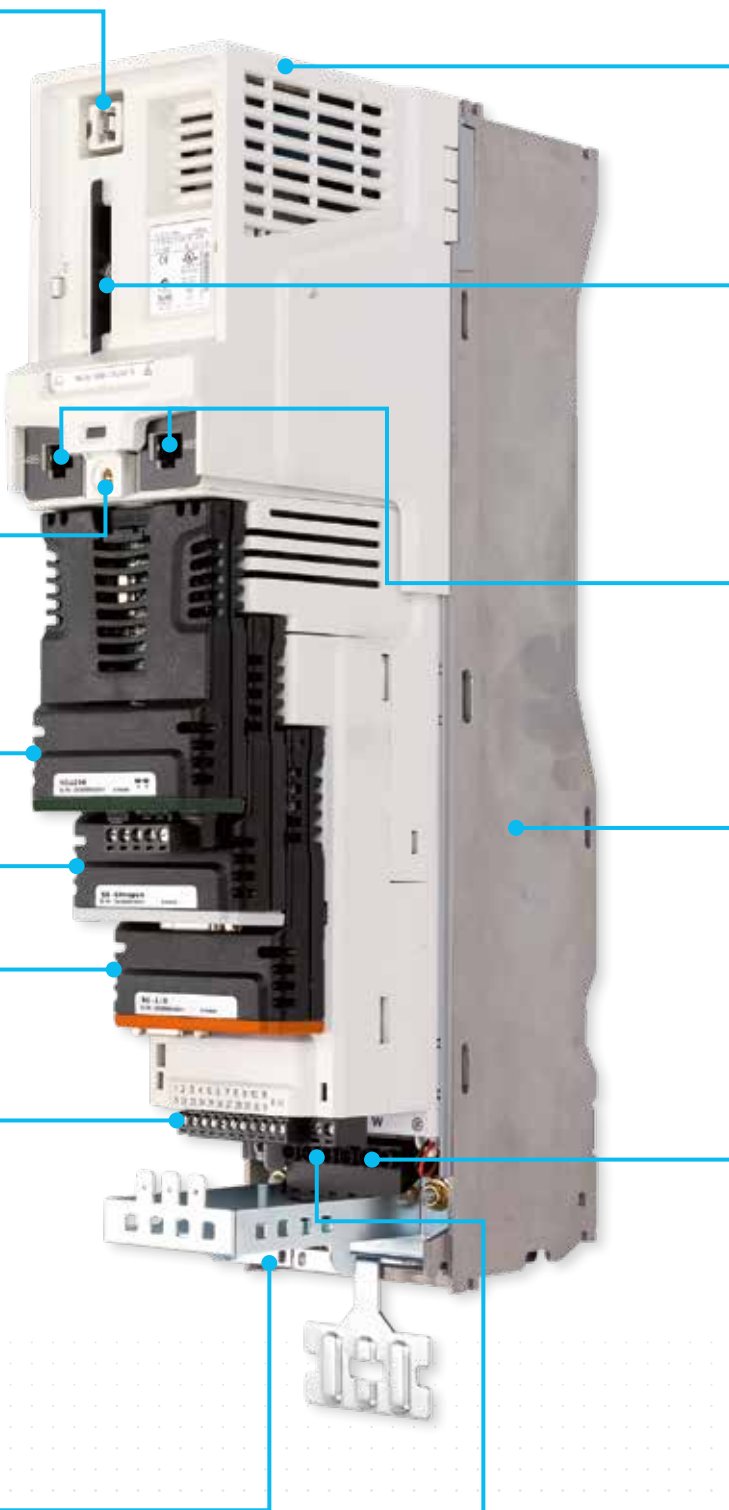
Pluggable control connections

Robust cable management system

Grounding point for shielded control and power cables



*Features and their locations vary between drive sizes.



Terminal cover for DC bus, braking terminal and onboard EMC filter*

Slot for Smartcard / SD Card Adaptor

For parameter storage, backup of drive configuration and cloning of parameters.

RS485 communications port Modbus RTU

Aluminium chassis

Allows flexible mounting, with high performance extruded heatsink.

Flexible dual port universal encoder interface

Supporting a wide range of incremental encoders (e.g. AB and SC), absolute encoders (e.g. SC.SSI, SC.EnDat, SC.Hiperface, SC.SC and SC.BiSS) and absolute comms encoders (EnDat and BiSS).

User-friendly power connections

With removable terminals*.

ELEVATOR DRIVE E300

DRIVE RATINGS

200 V Drives																
E300		03200106A10	04200137A10	04200185A10	05200250A10	06200330A10	06200440A10	07200610A10	07200750A10	07200830A10	08201160A10	08201320A10	09201760A10	09202190A10	10202830A	10203000A
Peak current	A	18.6	24	32.4	44	57.8	77	107	132	146	203	231	308	383	496	525
Nominal current @ 40° C	A	10.6	13.7	18.5	25	33	44	61	75	83	116	132	176	219	283	300
Nominal electrical power	kW	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
Switching frequency	kHz	8 (Selectable 3 to 16 kHz @ 50 % ED)														
Input voltage	V	3 phase 200 – 240 Vac, 50-60 Hz ± 10 %														
Braking transistor		Built-in as standard														

400 V Drives																					
E300		03400062A10	03400078A10	03400100A10	04400150A10	04400172A10	05400220A10	05400270A10	05400300A10	06400350A10	06400420A10	06400470A10	07400660A10	07400770A10	07401000A10	08401340A10	08401570A10	09402000A10	09402240A10	10402700E	10403200E
Peak current	A	11	14	18	27	31	39	48	53	62	74	83	116	135	175	235	275	350	385	473	543
Nominal current @ 40° C	A	6.2	7.8	10	15	17.2	22	27	30	35	42	47	66	77	100	134	157	200	220	270	310
Nominal electrical power	kW	2.2	3	4	5.5	7.5	9	11	15	15	18.5	22	30	37	45	55	75	90	110	132	160
Switching frequency	kHz	8 (Selectable 3 to 16 kHz @ 50 % ED)																			
Input voltage	V	3 phase 380 – 480 Vac, 50-60 Hz ± 10 %																			
Braking transistor		Built-in as standard																			

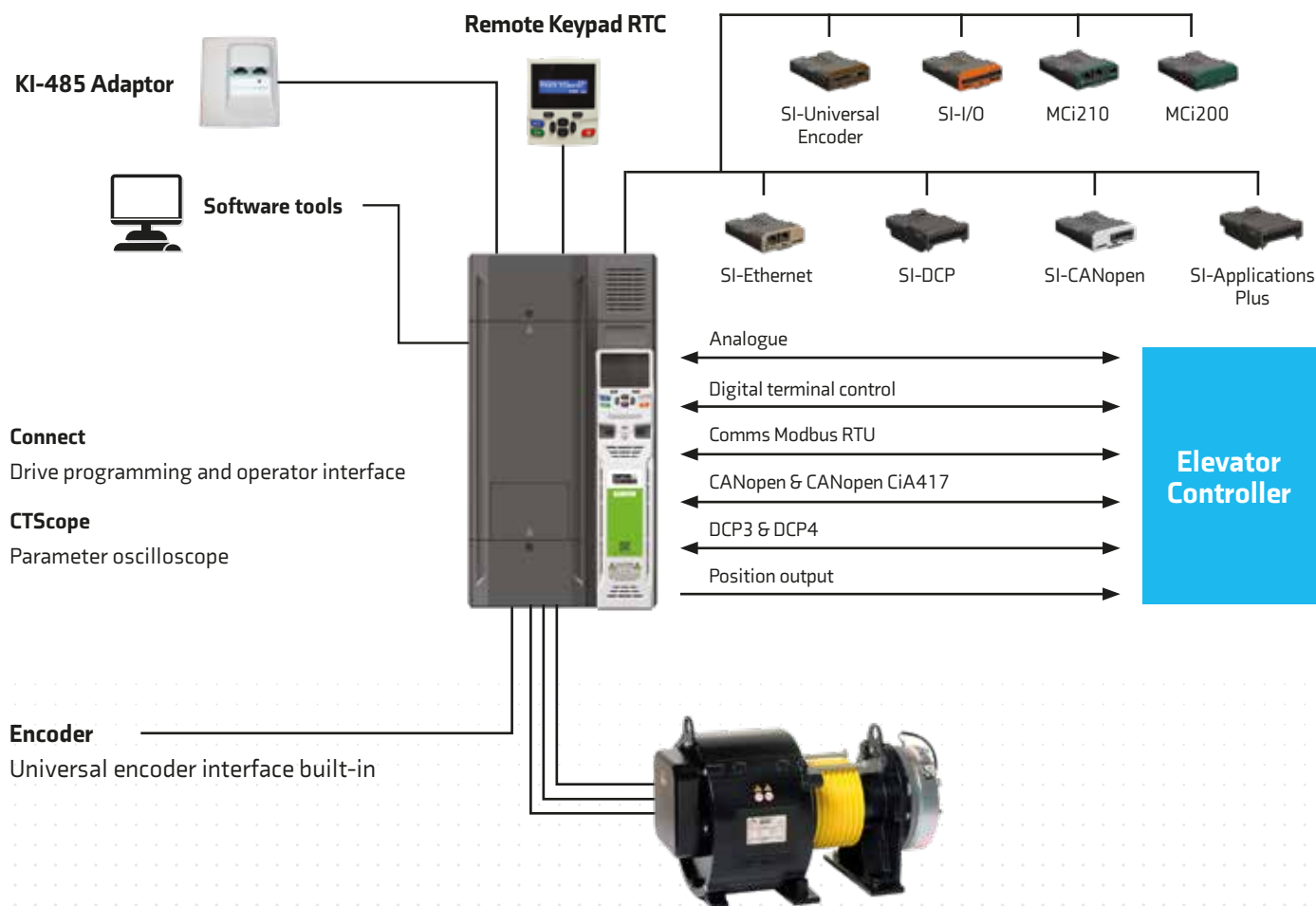
575 V Drives																		
E300		05500030A10	05500040A10	05500069A10	06500100A10	06500150A10	06500190A10	06500230A10	06500290A10	06500350A10	07500440A10	07500550A10	08500630A10	08500860A10	09501040A10	09501310A10	10501520E10	10501900E10
Peak current	A	5.5	7	12	17.5	26.5	33.5	40.5	51	54.5	77	96.5	110.5	150.5	182	229.5	266	332.5
Nominal current @ 40° C	A	3	4	6.9	10	15	19	23	29	31	44	55	63	86	104	131	152	190
Nominal electrical power	kW	1.5	2.2	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132
Switching frequency	kHz	8 (Selectable 3 to 16 kHz @ 50 % ED)																
Input voltage	V	3 phase 500 – 575 Vac, 50-60 Hz ± 10 %																
Braking transistor		Built-in as standard																

690 V Drives													
E300		07600190A10	07600240A10	07600290A10	07600380A10	07600440A10	07600540A10	08600630A10	08600860A10	09601040A10	09601310A10	10601500E10	10601780E10
Peak current	A	33.5	42	51	66.5	77	84	110.5	150.5	182	229.5	262.5	311.5
Nominal current @ 40° C	A	19	24	29	38	44	48	63	86	104	131	150	178
Nominal electrical power	kW	15	18.5	22	30	37	45	55	75	90	110	132	160
Switching frequency	kHz	8 (Selectable 3 to 16 kHz @ 50 % ED)											
Input voltage	V	3 phase 690 Vac, 50-60 Hz ± 10 %											
Braking transistor		Built-in as standard											

- Further information is available from your supplier on the following features:
- UPS operation – all drives have a dedicated low voltage mode allowing operation from a UPS, for example a standard 230V solution
- DC supply – all drives have the possibility of being supplied from a DC source from 24 V to the maximum voltage rating of the product
- Larger frame size units up to 450 A at 400 V are also available

ELEVATOR DRIVE E300

OPTIONS AND ACCESSORIES



Feedback



SI-Universal Encoder

Encoder input and simulated output interface supporting Quadrature, SinCos, EnDat and SSI encoders.

82400000018300

I/O



SI-I/O

Extended I/O interface module to increase the number of I/O analogue and digital points on a drive.

82400000017800

Communications



SI-DCP*

82400000019900

*Support of DCP3 & DCP4



SI-CANopen

82400000017600



SI-CiA417

82400000021700



SI-Ethernet

82400000017900



82400000017000

MCi200

Second processor, providing advanced customization using industry standard IEC61131-3 programming languages.



82400000016700

MCi210


Extended advanced machine control, provides MCi200 functionality with additional ports and simultaneous connectivity to 2 separate Ethernet networks.



82400000016500

SI-Applications Plus

Allows SyPTPro application programs to be recompiled and executed to enable rapid & simple upgrade for existing Control Techniques drive users.

Optional keypad	Order code
<p>Remote Keypad RTC: The keypad is local or remote mountable, allowing flexible mounting on the outside of a panel (meets IP54/NEMA 12). Three line full text, multi-language LCD keypad for rapid set-up and helpful diagnostics. Battery operated real-time clock allows accurate time stamping of events.</p> 	82400000019600

Through-hole IP65 kit

Frame size	Order code
3	3470-0053
4	3470-0056
5	3470-0067
6	3470-0055
7	3470-0079
8	3470-0083





Tile mount kit

Frame size	Order code
3	3470-0049
4	3470-0060
5	3470-0073

Retrofit brackets

To allow E300 drives to be fitted in existing Unidrive SP and Unidrive ES surface mount installations.

Frame size	Order code
4	3470-0062
5	3470-0066
6	3470-0074
7	3470-0078
8	3470-0087
9A, 9B, & 10	3470-0118

Optional accessories	Order code
<p>Smartcard: Smartcard memory device to back up and copy parameter sets.</p> 	2214-0010-00
<p>SD Card Adaptor: Allows an SD Card to be inserted into the Smartcard slot, for parameter back up and cloning.</p> 	82400000016400
<p>KI-485 adaptor: Allows the drive to communicate via additional RS485 ports.</p> 	82400000016100
<p>USB to RS485 comms cable: The cable allows the drive to connect to a PC for use with PC tools.</p> 	4500-0096

Environmental safety

IP20 / NEMA1 / UL TYPE 1*

*UL open class as standard, additional kit needed to achieve Type 1

- IP65 / NEMA12 / UL TYPE 12 rating can be achieved on the rear of the drive when through panel mounted
- Frames 9, 10 and larger can achieve IP55 / NEMA12 / UL TYPE 12 rating on the rear of the drive when through panel mounted
- Ambient temperature -20 °C to 40 °C as standard. Up to 55 °C with derating
- Humidity 95 % maximum (non-condensing) at 40 °C
- Altitude: 0 to 3000 m, derate 1 % per 100 m between 1000 m and 3000 m
- Random Vibration: Tested in accordance with IEC 60068-2-64
- Mechanical Shock Tested in accordance with IEC 60068-2-29
- Storage temperature -40 °C to 70 °C

Optional external EMC filters

External EMC filters can be used where required for compliance with the harmonised European EMC emission standard EN12016.

For more information please contact your supplier and refer to the E300's EMC datasheet document: Electromagnetic Compatibility Data for Lifts, Elevators, Escalators and Moving Walks.

Frame size	Voltage	Order code
3	200 V	4200-3230
	400 V	4200-3480
4	200 V	4200-0272
	400 V	4200-0252
5	200 V	4200-0312
	400 V	4200-0402
	575 V	4200-0122
6	200 V	4200-2300
	400 V	4200-4800
	575 V	4200-3690
7	200 V & 400 V	4200-1132
	575 V & 690 V	4200-0672
8	200 V & 400 V	4200-1972
	575 V & 690 V	4200-1662
9A	200 V & 400 V	4200-3021
	575 V & 690 V	4200-1660
9E & 10	200 V & 400 V	4200-4460
	575 V & 690 V	4200-2210

DRIVE OBSESSED



Control Techniques has been designing and manufacturing the best variable speed drives in the world since 1973.

Our customers reward our commitment to building drives that outperform the market. They trust us to deliver on time every time with our trademark outstanding service.

More than 45 years later, we're still in pursuit of the best motor control, reliability and energy efficiency you can build into a drive. That's what we promise to deliver, today and always.

1.4K+

Employees

70

Countries

#1 FOR ADVANCED MOTOR AND DRIVE TECHNOLOGY



Nidec Corporation is a global manufacturer of electric motors and drives.

Nidec was set up in 1973. The company made small precision AC motors and had four employees. Today, it's a global corporation that develops, builds and installs cutting-edge drives, motors and control systems in over 70 countries with a workforce of more than 110,000.

You'll find its innovations in thousands of industrial plants, IoT products, home appliances, cars, robotics, mobile phones, haptic devices, medical apparatus and IT equipment all over the world.

109K

Employees

\$14.6B

Group Turnover

70+

Countries

330+

Companies



CONTROL TECHNIQUES IS YOUR GLOBAL DRIVES SPECIALIST.

With operations in over 70 countries, we're open
for business wherever you are in the world.

For more information, or to find your local drive
centre representatives, visit:

www.controltechniques.com

Connect with us



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