



## MiniAx & MM55 Motor

Ultra compact brushless drives  
and motors rated 0.3 kW and 0.6 kW

Convertitori e motori brushless ultra compatti  
da 0,3 kW e 0,6 kW nominali

Bürstenlose Miniatur-Servoregler  
und Motoren mit 0,3 kW und 0,6 kW Leistung

Servoreguladores y motores brushless  
ultra compactos de 0,3 kW y 0.6 kW nominales



# MiniAx and MM55

The **MiniAx** is an ultra compact and robust servo module suitable for a wide range of automation applications. They are ideal for position control, velocity and torque loop control that require a dynamic and precise response. Designed to work with supplies from 20 to 80Vdc, the cost effective MiniAx offers the OEM builder a very compact and reliable package enhancing the competitiveness of the machinery.

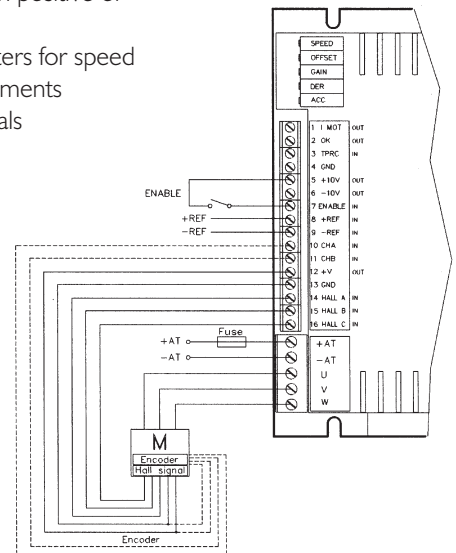
The **MM55** AC brushless permanent magnet servo motor was designed to respond to the demands for a low cost, high performance motor in the automation industry. Being brushless, no preventive maintenance is required, and is inherently reliable. The laminated frame construction gives a very high torque/inertia ratio and is ideal where machinery space is at a premium. The standard feedback supplied is an incremental encoder with 2048 ppr (3000 rpm) and 1024 ppr (5000 rpm). The encoder has three additional commutation outputs employing hall effect sensors.

## Applications for MiniAx and MM55 Motor

- Material handling conveyors
- Automatic Assembly machines
- Textile machines
- Robots
- Medical equipments
- Printing machines
- X-Y Assemblies
- Labelling machines
- Small machine tools eg. Milling, EDM, lathes
- Winder and Unwinder

## MiniAx standard features

- Trapezoidal 3-phase brushless, 4 quadrant
- Compact dimensions – surface mount technology
- IP00 chassis for panel mounting
- Mosfet power stage, with high frequency PWM (22 kHz) for low audible noise and current ripple
- Encoder feedback standard
- I<sup>2</sup>t function
- Torque or speed control with torque override
- Five LED (Red/Green) showing drive status
- Full external short-circuit, under and over voltage, heat sink over temperature and loss of hall sensor wire
- Hall sensor phase 120°
- Signal enable with positive or negative logic
- Five potentiometers for speed parameter adjustments
- Pluggable terminals



## General specifications

| Model  | Voltage Supply   | Models     | Rated Current | Peak current for 2 secs. |
|--------|------------------|------------|---------------|--------------------------|
| MiniAx | (Vdc)<br>20 - 80 | 60 x 5/10  | (A)<br>5      | (A)<br>10                |
|        |                  | 60 x 10/20 | 10            | 20                       |

- Ambient temperature (°C) 0 to 40
- Analogue reference (Vdc) ± 10
- Motor current signal at peak (Vdc) ± 7
- Auxiliary power supply (Vdc) ± 10 (4mA)
- Encoder Supply (Vdc) +5V (130mA)
- Enable signal (Vdc) +10 to 30
- Drift (µV/°C) ± 18
- Drive healthy O.K. open collector sinking 50mA, <30 Vdc
- Max. encoder frequency (kHz) 250
- Current loop bandwidth (kHz) 2.5
- Humidity, non-condensing 10 to 95%
- Altitude (m) < 2000
- Weight (Kg) 0.35

### MM55 Motor standard features

- 5 frames from 0.55 Nm to 1.35 Nm stall torque in 55 mm flange fitment
- Class F insulation
- Brushless with high reliability, no maintenance
- Low rotor inertia with high dynamic performance
- Rare earth magnets
- Winding vacuum impregnated for mechanical robustness and high thermal performance
- High overload capability.
- IP55 protection.

### Feedback

- Standard feedback supplied is an incremental encoder +5 Vdc with A, B, Z and commutation outputs as differential RS485 drivers (20 mA).

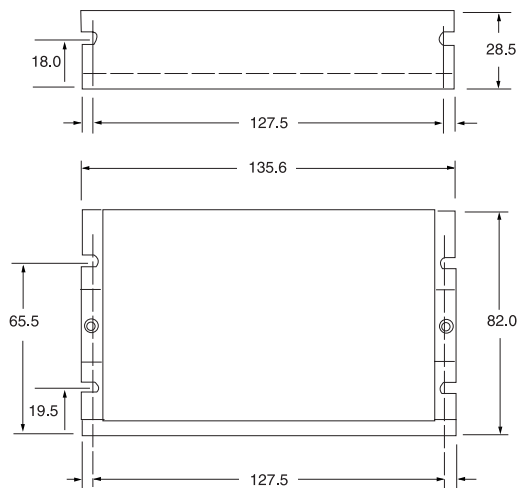
### Brake option

- Available with a fitted internal brake.
- Fail-safe, energise to release.
- Static rating: 1.1 Nm (normal parking).
- Dynamic rating: 0.75 Nm, (for infrequent emergency use).
- Brake power requirement 24V dc, 7W.

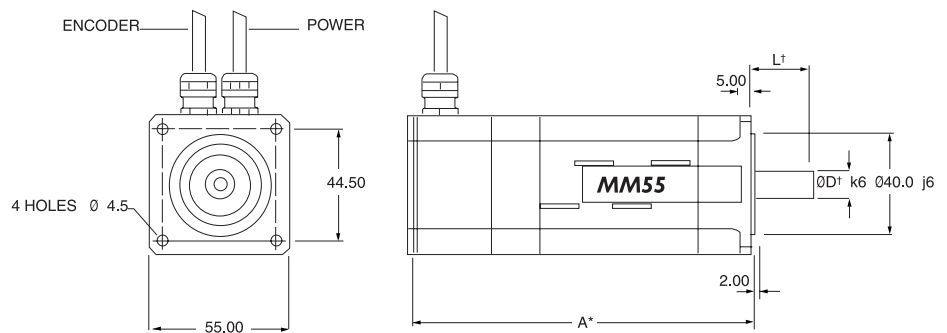
### EMC

- RFI filters available

### MiniAx Drive Dimensions (mm)



### MM55 Dimensions (mm)



### MiniAx and MM55 selection chart

| MiniAx drive type                                  | 60x5/10                         |        | 60x10/20 |       |        |
|--|---------------------------------|--------|----------|-------|--------|
| MM55   | MM55                            |        |          |       |        |
| Motor Length                                       | A30                             | B30    | C30      | A50   | B50    |
| Stall torque (Nm)                                  | 0.65                            | 1.08   | 1.35     | 0.55  | 0.70   |
| Peak torque (Nm)                                   | 1.4                             | 2.7    | 2.7      | 1.4   | 1.4    |
| Stall current (A)                                  | 4.7                             | 7.9    | 10       | 7.8   | 10     |
| Peak current (A)                                   | 10                              | 20     |          |       |        |
| Nominal speed (rpm)                                | 3000                            |        |          | 5000  |        |
| Ke ac (Vrms/krpm)                                  | 11.6                            |        |          | 5.9   |        |
| Encoder feedback (ppr)                             | 2048                            |        |          | 1024  |        |
| Rotor inertia (gcm <sup>2</sup> )                  | 120                             | 220    | 320      | 120   | 220    |
| Motor poles  | 8                               |        |          |       |        |
| Motor temperature rise (°C)                        | 80                              | 80     | 50       | 80    | 50     |
| Ambient temperature (°C)                           | operates up to 40°C ambient     |        |          |       |        |
| Back EMF (Vac)                                     | 60                              |        |          |       |        |
| Insulation class                                   | F                               |        |          |       |        |
| Standard version motor specification               | Please refer to pages 10 and 11 |        |          |       |        |
| Length - No brake (mm) (A*)                        | 106                             | 136    | 166      | 106   | 136    |
| Length - Braked (mm) (A*)                          | 141                             | 171    | 201      | 141   | 171    |
| Weight - No brake (kg)                             | 1.1                             | 1.6    | 2.0      | 1.1   | 1.6    |
| Weight - Braked (kg)                               | 1.5                             | 2.0    | 2.4      | 1.5   | 2.0    |
| Shaft Dimensions (L <sup>1</sup> xD <sup>1</sup> ) | 20xØ9                           | 23xØ11 | 23xØ11   | 20xØ9 | 23xØ11 |

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# MiniAx e MM55

I Convertitori **MiniAx** sono dei moduli ultra compatti, indicati per applicazioni nel campo dell'automazione industriale. Sono la soluzione ideale per posizionatori di controllo incrementali, anelli di velocità e sistemi di posizionamento che richiedono una risposta veloce e precisa. Progettati per operare da 20 a 80 V d.c., sono idonei per una vasta gamma di applicazioni, il progetto compatto, a costo competitivo e l'affidabilità ne fanno un convertitore all'avanguardia che si propone al mercato come leader nel suo genere

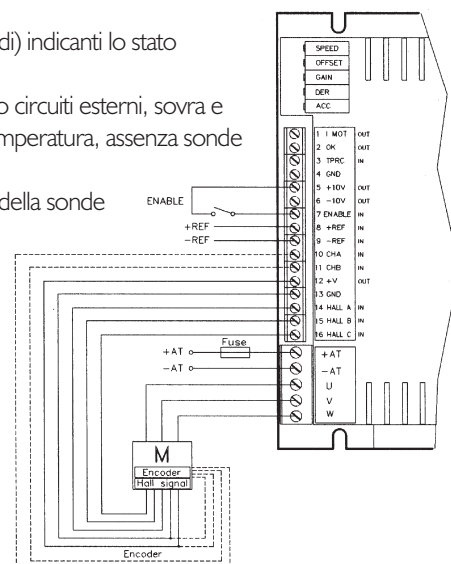
La serie di servomotori brushless **MM55** a magneti permanenti è stata progettata per rispondere alle esigenze dell'automazione industriale con altissimi livelli di prestazioni e costi contenuti, sono motori estremamente affidabili che richiedono una manutenzione praticamente nulla. La gamma di servomotori da 0.55 a 1.35 Nm di dimensioni contenute è indicativa di un eccellente rapporto coppia / inerzia. La retroazione standard è da encoder incrementale 2048 impulsi/giro con sonde di commutazione integrate (3000 RPM) e 1024 impulsi/giro (5000 RPM).

## MiniAx e MM55 in Applicazioni tipiche

- Convogliatori
- Macchine tessili
- Packaging
- Posizionatori
- Robot
- Elettromedicali
- Macchine da stampa
- Tavole X - Y
- Alimentatori
- Assi per macchine utensili

## Caratteristiche Standard

- Brushless trifase trapezoidale, quattro quadranti
- Dimensioni compatte grazie alla tecnologia a montaggio superficiale
- Montaggio a pannello
- Stadio di potenza a Mosfet PWM ad alta frequenza per un funzionamento silenzioso e con ripple di corrente contenuto
- Alimentazione monofase c.c.
- Due modi di retroazione di velocità:
  - Retroazione da sonde di commutazione
  - Retroazione da encoder + sonde di commutazione
- Funzione I<sup>2</sup>t
- Controllo di coppia o di velocità con supervisione di coppia
- Cinque LED (Rossi/Verdi) indicanti lo stato di operatività
- Protezione contro corto circuiti esterni, sovra e sotto tensione, sovratemperatura, assenza sonde di commutazione
- Fase di commutazione della sonde di commutazione 120° o 60°
- Abilitazione segnali con logica positiva o negativa
- Cinque potenziometri di regolazione dei parametri di velocità



## Specifiche Generali

| Modello | Tensione | Taglia     | Corrente Nominale | Corrente di picco per 2 s. |
|---------|----------|------------|-------------------|----------------------------|
| MiniAx  | (Vdc)    | 60 x 5/10  | (A)<br>5          | (A)<br>10                  |
|         | 20 - 80  | 60 x 10/20 | 10                | 20                         |

- Temperatura ambiente (°C) 0 to 40
- Riferimento analogico (Vdc) ± 10
- Segnale corrente di picco motore (Vdc) ± 7
- Alimentazione ausiliaria (Vdc) ± 10 (4mA)
- Alimentazione encoder (Vdc) +5V (130mA)
- Segnale abilitazione (Vdc) +10 to 30
- Drift (uV/°C) ± 18
- Segnale drive OK tipo open collector 50mA, <30 Vdc
- Max frequenza encoder (kHz) 250
- Banda passante loop di corrente (kHz) 2.5
- Umidità senza condensa 10 to 95%
- Altitudine (m) < 2000
- Peso (Kg) 0.35

### Caratteristiche Standard

- Cinque grandezze di motore con flangia 55 mm per erogare da 0.55 a 1.35 Nm di coppia di stallo
- Isolamento in classe B
- Tipo brushless ad alta affidabilità senza manutenzione
- Inerzia rotorica molto bassa per alte prestazioni dinamiche
- Magneti permanenti a terre rare con assenza di smagnetizzazione alle alte correnti e velocità
- Impregnazione degli avvolgimenti per garantire un maggior isolamento
- Alta capacità di sovraccarico
- Protezione IP65

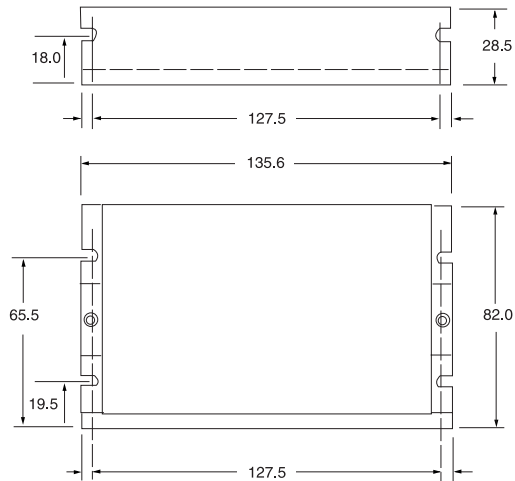
### Retroazione

- Retroazione standard da encoder incrementale line transmitter, +5 Vdc e sonde di commutazione a 120°

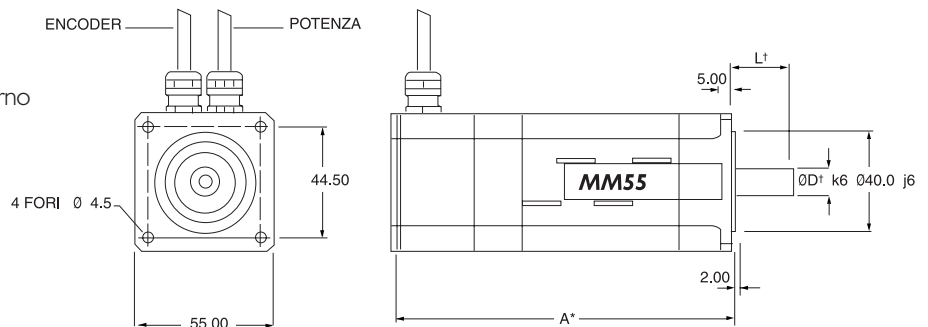
### Freno opzionale

- MM55 è disponibile su richiesta con freno interno
- Freno positivo attivo quando alimentato
- Dato nominale a rotore bloccato: 1,1 Nm
- Dato nominale dinamico: 0,75 Nm (esclusivamente per uso in caso di emergenza)
- Alimentazione 24 Vdc 7 W

### Dimensioni Meccaniche Convertitore



### Dimensioni Meccaniche Motore



### MiniAx e MM55 : caratteristiche

| MiniAx   | 60x5/10                            |        | 60x10/20 |       |        |
|--|------------------------------------|--------|----------|-------|--------|
|  | MM55                               |        |          |       |        |
| Lunghezza motore                                   | A30                                | B30    | C30      | A50   | B50    |
| Coppia di stallo (Nm)                              | 0.65                               | 1.08   | 1.35     | 0.55  | 0.70   |
| Coppia di picco (Nm)                               | 1.4                                | 2.7    | 2.7      | 1.4   | 1.4    |
| Corrente di stallo (A)                             | 4.7                                | 7.9    | 10       | 7.8   | 10     |
| Corrente di picco (A)                              | 10                                 | 20     |          |       |        |
| Velocità nominale (rpm)                            | 3000                               |        |          | 5000  |        |
| Ke ac (Vrms/krpm)                                  | 11.6                               |        |          | 5.9   |        |
| Retroazione da encoder (ppr)                       | 2048                               |        |          | 1024  |        |
| Inerzia rotorica (gcm <sup>2</sup> )               | 120                                | 220    | 320      | 120   | 220    |
| Poli motore  | 8                                  |        |          |       |        |
| Range temperatura motore (°C)                      | 80                                 | 80     | 50       | 80    | 50     |
| Temperatura ambiente (°C)                          | Funzionamento fino a 40°C ambiente |        |          |       |        |
| Controforza elettromotrice (Vac)                   | 60                                 |        |          |       |        |
| Classe di isolamento                               | F                                  |        |          |       |        |
| Specifiche motore versione standard                | Vedere pag. 10 e 11                |        |          |       |        |
| Lunghezza senza freno (mm) (A*)                    | 106                                | 136    | 166      | 106   | 136    |
| Lunghezza con freno (mm) (A*)                      | 141                                | 171    | 201      | 141   | 171    |
| Peso senza freno (kg)                              | 1.1                                | 1.6    | 2.0      | 1.1   | 1.6    |
| Peso con freno (kg)                                | 1.5                                | 2.0    | 2.4      | 1.5   | 2.0    |
| Dimesioni albero (L <sup>+</sup> xD <sup>+</sup> ) | 20xØ9                              | 23xØ11 | 23xØ11   | 20xØ9 | 23xØ11 |

Le informazioni contenute in questa brochure sono da considerarsi indicative e corrette al momento della stampa, ma non vincolanti in fase contrattuale. Nella costante ricerca di miglioramento del prodotto, Control Techniques si riserva il diritto di modificare le specifiche in qualsiasi momento senza alcun obbligo di notifica.

# MiniAx und MM55

Die **MiniAx** Servoregler sind extrem kompakte Module, entwickelt für Anwendungen in der Automatisierungstechnik. Sie sind besonders geeignet für Lage- oder Geschwindigkeitsregelung und Positionierungssysteme, die hohe Präzision und schnelle Reaktion erfordern. Die Gleichspannungsversorgung von 20 bis 80V erleichtert die Anpassung an verschiedene Applikationen. Die kompakten Abmessungen, die hohe Betriebssicherheit und das Preis-Leistungsverhältnis stellen diese fortschrittlichen Regler an die Spitze ihrer Klasse.

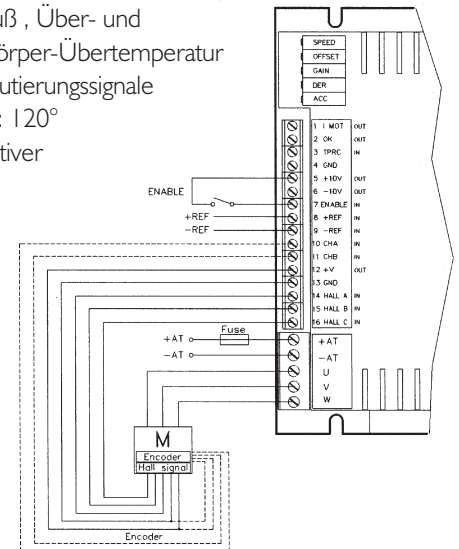
Der **MM55**, ein bürstenloser Permanentmagnetmotor, wurde als „low cost“ Hochleistungsmotor für die Automatisierungsindustrie konzipiert. Diese Motoren sind wartungsfrei, extrem betriebssicher und zeichnen sich durch ein hohes Verhältnis Drehmoment/Eigenträgheit aus. Als Standard-Rückführung ist ein Encoder mit 2048 Imp./Umdr. bis 3000 min<sup>-1</sup> und 1024 Imp./Umdr. bis 5000 min<sup>-1</sup> mit integrierten Kommutierungssignalen eingebaut (Hallsensor).

## Anwendungen für den MiniAx und MM55

- Fördertechnik
- Textilmaschinen
- Verpackungsmaschinen
- Etikettiermaschinen
- Roboter
- Medizinische Geräte
- Druckmaschinen
- X-Y Kreuztische
- Kleine Werkzeugmaschinen
- Wickler und Abwickler

## MiniAx Standardmerkmale

- Bürstenlose Dreiphasen - Trapez kommutierung, 4 Quadranten
- Kompakte Abmessungen (SMD Technik)
- IP00 Träger für Wandmontage
- Mosfet Leistungsteil mit hoher Schaltfrequenz PWM (22kHz) für leisen Betrieb und reduzierte Stromwelligkeit
- Encoderrückführung als Standard
- I<sup>2</sup>t Überwachung
- Drehmomenten-Regelung oder Drehzahlregelung mit Drehmomenten-Überlagerung
- Fünf Leuchtdioden (grün/rot) zur Statusanzeige
- Schutz gegen Kurzschluß, Über- und Unterspannung, Kühlkörper-Übertemperatur und Fehlen der Kommutierungssignale
- Kommutierungssignale: 120°
- Reglerfreigabe mit positiver oder negativer Logik
- Fünf Potentiometer zur Drehzahlregleroptimierung
- Schraub – klemmenanschlüsse, steckbar



## Technische Spezifikation

| Model  | Eingangsspannung | Baugröße         | Nennstrom | Spitzenstrom für 2s |
|--------|------------------|------------------|-----------|---------------------|
| MiniAx | (Vdc)            | (A)<br>60 x 5/10 | (A)<br>5  | (A)<br>10           |
|        | 20 - 80          | 60 x 10/20       | 10        | 20                  |

|  |                         |
|--|-------------------------|
| • Umgebungstemperatur (°C)                       | 0-40                    |
| • Analoger Sollwerteingang (Vdc)                 | +/- 10                  |
| • Analoger Motorstrom-Ausgang (Vdc)              | +/- 7                   |
| • Hilfspannungsversorgung (Vdc)                  | +/- 10V / 4mA           |
| • Spannungsversorgung für Encoder (Vdc)          | +5V / 130mA             |
| • Reglerfreigabe-Eingang (Vdc)                   | 10-30                   |
| • Drift (µV/°C)                                  | +/- 18                  |
| • Regler betriebsbereit (open collector Ausgang) | 50mA, <30Vdc            |
| • Maximale Encoder-Frequenz (kHz)                | 250                     |
| • Stromregler Bandbreite (kHz)                   | 2,5                     |
| • Relative Luftfeuchtigkeit (%)                  | 10-95 ohne Kondensation |
| • Aufstellhöhe (ü. NN)                           | < 2000 m                |
| • Gewicht (Kg)                                   | 0,35                    |

### MM55 Standardmerkmale

- 5 Varianten von 0,55 Nm bis 1,35 Nm (Stillstands Drehmoment) mit 55 mm Flansch
- Isolationsklasse F
- Bürstenlos, betriebssicher, wartungsfrei
- Niedriges Rotorträgheitsmoment, hochdynamisches Verhalten
- Seltene-Erde Magnete
- Hohe Überlastbarkeit
- Schutzart IP55

### Rückführung

- Als Standarddrehzahlgeber wird ein Inkremental-Encoder (5V dc), mit Hallsensor-Kommutierungssignalen (120°) zur Erfassung der Rotorlage, verwendet.

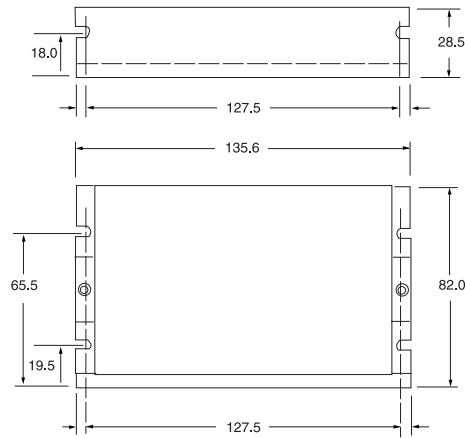
### Optionale Haltebremse

- Der MM55 ist mit eingebauter Haltebremse lieferbar
- Drahtbruchsicher: löst erst nach dem Zuschalten der Versorgungsspannung
- Haltemoment statisch: 1.1 Nm
- Haltemoment dynamisch: 0.75 Nm (für Nothalt)
- Versorgungsspannung: 24 Vdc, 7W

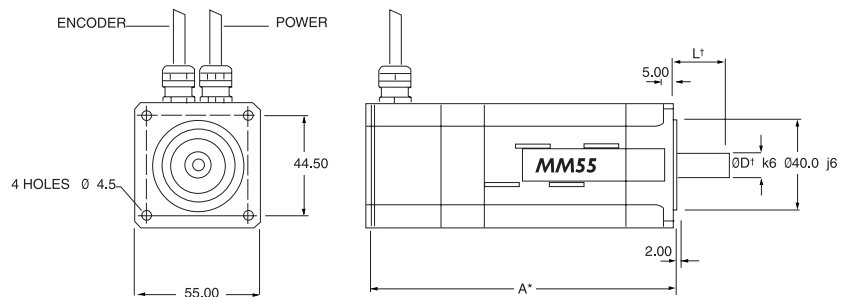
### EMV

- Netzfilter lieferbar

### MiniAx – Abmessungen (mm)



### MM55 – Abmessungen (mm)



### MiniAx und MM55 Auswahl-Tabelle

| MiniAx Reglertyp  | 60x5/10                |        | 60x10/20 |       |        |
|---|------------------------|--------|----------|-------|--------|
| MM55  | MM55                   |        |          |       |        |
| Baulänge  | A30                    | B30    | C30      | A50   | B50    |
| Stillstandsmoment (Nm)                                      | 0,65                   | 1,08   | 1,35     | 0,55  | 0,70   |
| Spitzendrehmoment (Nm)                                      | 1,4                    | 2,7    | 2,7      | 1,4   | 1,4    |
| Stillstandsstrom (A)  | 4,7                    | 7,9    | 10       | 7,8   | 10     |
| Spitzenstrom (A)  | 10                     | 20     |          |       |        |
| Nenn Drehzahl (min-1)                                       | 3000                   |        | 5000     |       |        |
| Ke (V/1000 min-1)   | 11,6                   |        | 5,9      |       |        |
| Encoder-Strichzahl  | 2048                   |        | 1024     |       |        |
| Rotor Trägheitsmoment (gcm <sup>2</sup> )                   | 120                    | 220    | 320      | 120   | 220    |
| Anzahl der Pole   | 8                      |        |          |       |        |
| Motor Erwärmung (K)   | 80                     | 80     | 50       | 80    | 50     |
| Zulässige Umgebungstemperatur (°C)                          | 40°C                   |        |          |       |        |
| Gegen EMK (V)   | 60                     |        |          |       |        |
| Isolationsklasse (mit Encoder)                              | F                      |        |          |       |        |
| Standard Spezifikation                                      | Siehe Seiten 10 und 11 |        |          |       |        |
| Baulänge ohne Bremse (mm) (A*)                              | 106                    | 136    | 166      | 106   | 136    |
| Baulänge mit Bremse (mm) (A*)                               | 141                    | 171    | 201      | 141   | 171    |
| Gewicht ohne Bremse (kg)                                    | 1.1                    | 1.6    | 2.0      | 1.1   | 1.6    |
| Gewicht mit Bremse (kg)                                     | 1.5                    | 2.0    | 2.4      | 1.5   | 2.0    |
| Wellenende (Länge <sup>†</sup> x Durchmesser <sup>†</sup> ) | 20xØ9                  | 23xØ11 | 23xØ11   | 20xØ9 | 23xØ11 |

Der Inhalt dieser Broschüre dient ausschließlich Informationszwecken und ist nicht Grundlage eines Vertrages. Control Techniques übernimmt keine Garantie für deren Richtigkeit und behält sich das Recht vor, die technischen Daten ihrer Produkte aufgrund laufender Entwicklungsprozesse ohne Ankündigung zu ändern.

# MiniAx y MM55

Los reguladores **MiniAx** son unos módulos ultra compactos indicados para aplicaciones en el sector de la automatización industrial. Son la solución ideal para controles de posición, regulación de velocidad y par, que necesitan una respuesta rápida y exacta. Diseñados para operar desde 20 hasta 80 V d.c., son idóneos para una vasta gama de aplicaciones. La ejecución compacta, a un precio competitivo y su fiabilidad, lo hacen un regulador a la vanguardia que se sitúa en el mercado como líder en su género.

La serie de servomotores brushless **MM55** con imanes permanentes ha sido proyectada para satisfacer las exigencias de la automatización industrial con niveles de prestación muy altos y precios contenidos. Son motores extremadamente fiables que necesitan una mantenimiento prácticamente inexistente. La gama de servomotores desde 0.65 hasta 1.35 Nm, de dimensiones pequeñas es indicativa de una excelente relación entre los pares y la inercia. La realimentación estándar es por encoder incremental de 2048 impulsos por vuelta (3000 RPM) y 1024 impulsos/vuelta (5000 RPM) con sondas de commutación por efecto hall integradas.

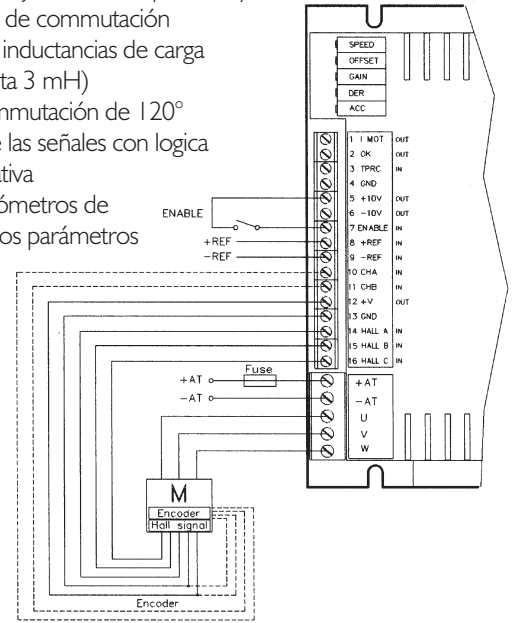
## MiniAx Y MM55

### Aplicaciones:

- Cintas transportadoras
- Máquinas textiles
- Embalaje y etiquetadoras
- Posicionadores
- Robots
- Electromedicina
- Máquinas de imprenta
- Tablas X-Y
- Alimentadores
- Ejes para maquinas herramienta

### Características Estándar

- Brushless trapezoidal trifásico, cuatro cuadrantes
- Dimensiones compactas gracias a la tecnología de montaje superficial
- Montaje a panel
- Potencia a Mosfet con PWM con una frecuencia alta (22 kHz) para un funcionamiento silencioso y con rizado de corriente reducido
- Alimentación monofase c.c
- Dos modos de control velocidad:
  - Realimentación por sondas de commutación
  - Realimentación por encoder
    - + sondas de commutación
- Función I<sup>t</sup>
- Control de par o de velocidad con supervisión de par
- Cinco LED (Rojos/Verdes) que indican el estado de operación
- Protegidos completamente contra cortocircuitos externos, sobre y sub voltaje, sobre temperatura y la falta de sondas de commutación
- Vasta gama de inductancias de carga (desde 0.2 hasta 3 mH)
- Sondas de commutación de 120°
- Habilitación de las señales con logica positiva o negativa
- Cinco potenciómetros de regulación de los parámetros de velocidad
- Borne de conexión con tornillos



|  |                         |
|--|-------------------------|
| • Gama alimentación (Vdc)              | 20-80                   |
| • Frecuencia operativa del pwm (kHz)   | 22                      |
| • Temperatura de trabajo (F°)          | 32° ÷ 104°              |
| • Temperatura de trabajo (C°)          | 0° + 40°                |
| • Temperatura de almacenaje (F°)       | 32° ÷ 158°              |
| • Temperatura de almacenaje (C°)       | 0° + 70°                |
| • Derivativa típica (uV/C°)            | +/-18                   |
| • Referencia analógica (V)             | +/-10                   |
| • Monitor corriente motor (V)          | +/-7                    |
| • Aliment auxiliar para encoder        | +5V-130mA               |
| • Señal de habilitación (V)            | +10/30                  |
| • Fuente alimentación auxiliar (V)     | ± 10 (4mA)              |
| • Ancho de banda bucle corriente (kHz) | 2.5                     |
| • Humedad (%)                          | 10-95% sin condensación |

## Especificaciones Estandar

| Modelo | Voltaje | Talla          | Corriente Nominal | Corriente de pico para 2 s. |
|--------|---------|----------------|-------------------|-----------------------------|
| MiniAx | (Vdc)   | (A)<br>60x5/10 | (A)<br>5          | (A)<br>10                   |
|        | 20 - 80 | 60x10/20       | 10                | 20                          |

## Características Estándar

- 5 potencias desde 0,65 Nm hasta 1,35 Nm , par a rotor bloqueado, en talla 55 de brida
- Aislamiento clase F
- Brushless con alta fiabilidad y sin mantenimiento
- Baja inercia rotórica con altas prestaciones dinámicas
- Imanes de tierras raras
- Devanados con impregnación al vacío para robustecer mecánicamente y térmicamente
- Gran capacidad de sobrecarga
- Protección IP55

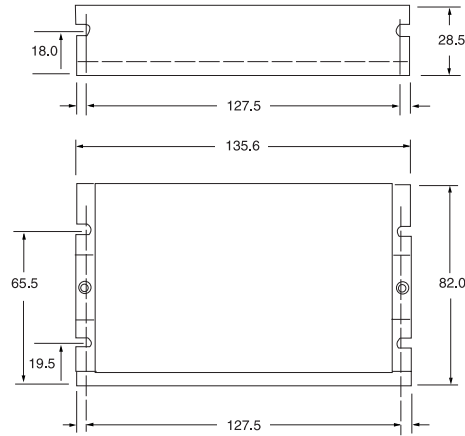
## Realimentacion

- En estándar se suministra con encoder incremental +5V dc y sondas efectos Hall integradas, colocadas a 120° con salida line driver.

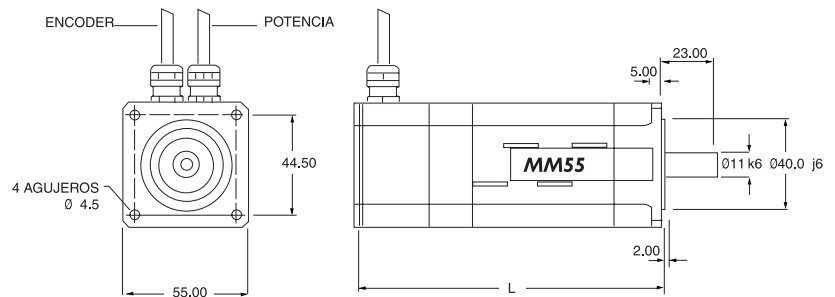
## Motores Disponibles

- MM55 con el accionamiento MiniAx en combinación

## Dimensiones Mecánicas Del Convertidor



## Dimensiones Mecánicas Del Motor



Tamaño A L= mm 106

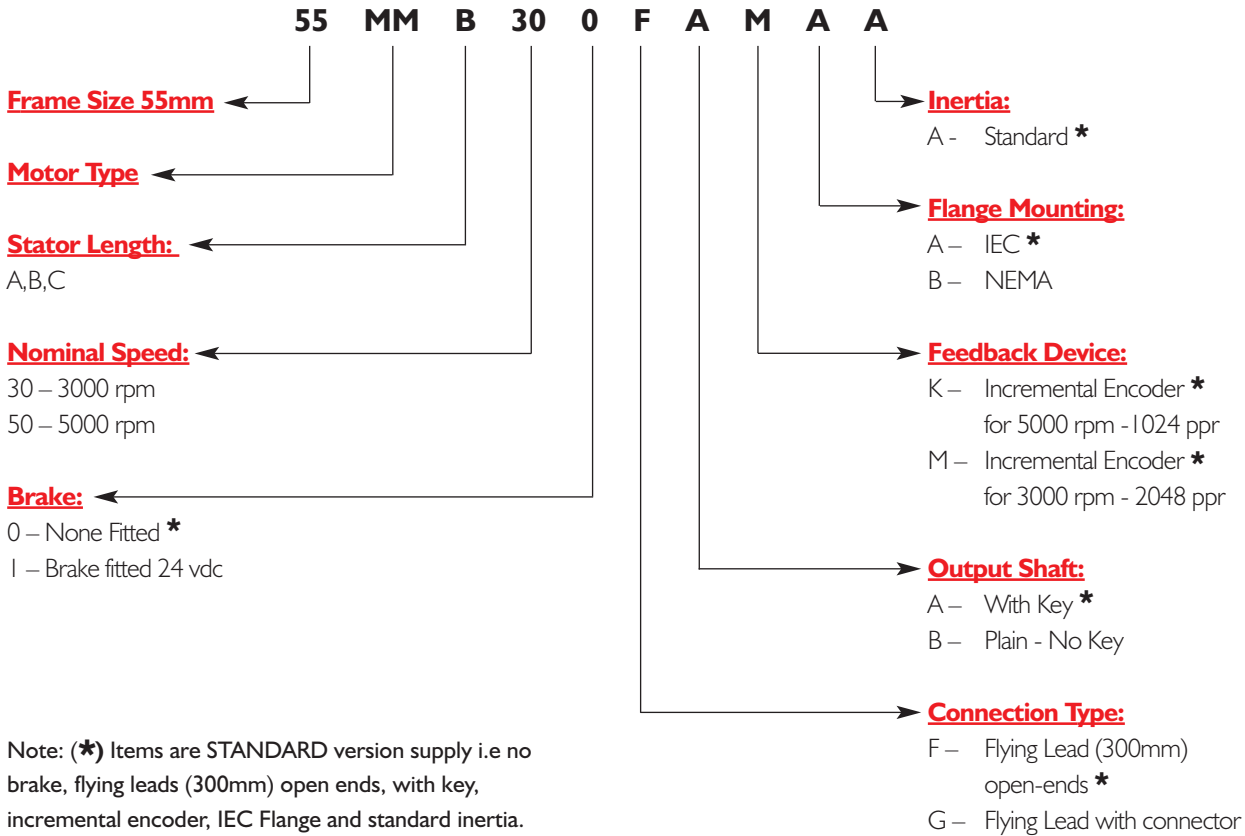
Tamaño B L= mm 136

Tamaño C L= mm 166

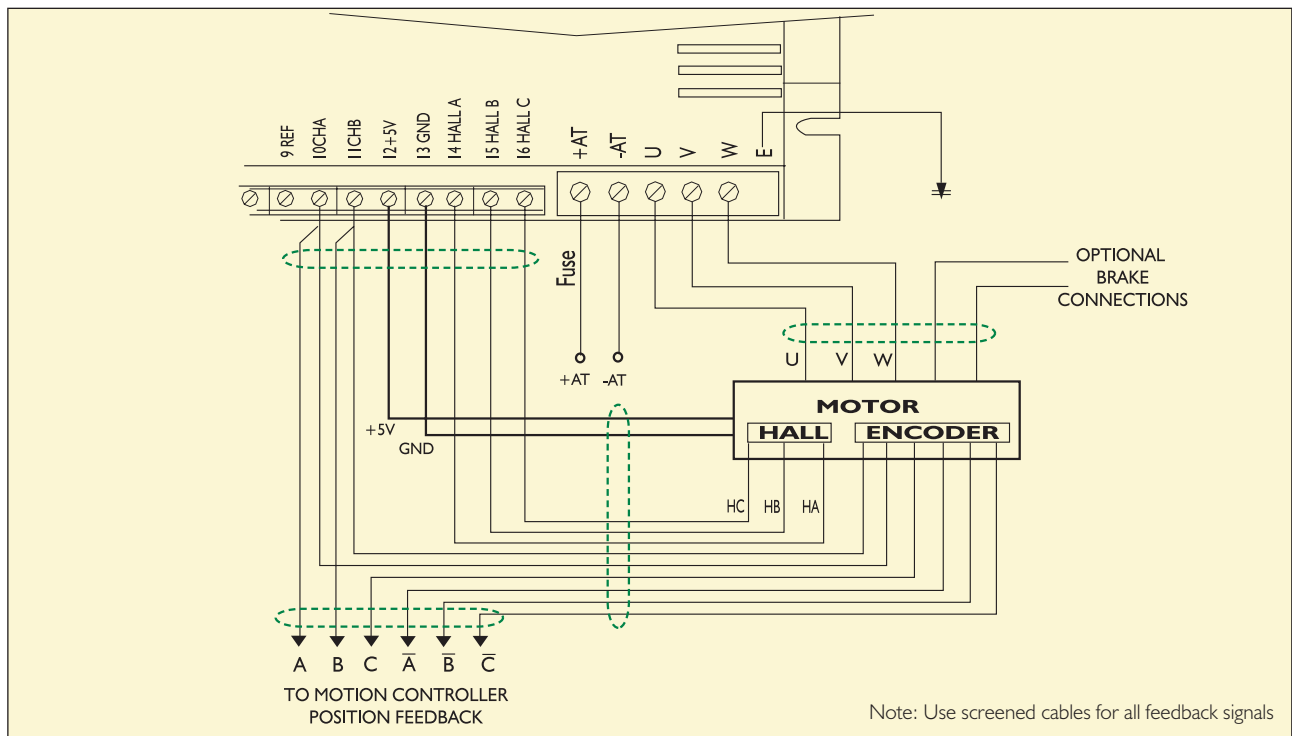
| MM55 MiniAx                             | MM55     |      |       |      |      |
|---|----------|------|-------|------|------|
|   | A        | B    | C     | A    | B    |
| Talla de motor                          | A        | B    | C     | A    | B    |
| MiniAx                                  | 60x10/20 |      |       |      |      |
| Par a rotor bloqueado (Nm)              | 0,65     | 1,08 | 1,35  | 0,55 | 0,70 |
| Par de pico (Nm)                        | 1,4      | 2,7  | 2,7   | 1,4  | 1,4  |
| Corriente a rotor bloqueado (A)         | 4,7      | 7,9  | 10    | 7,8  | 10   |
| Corriente de pico (A)                   | 10       | 20   |       |      |      |
| Inercia del rotor (gcm <sup>2</sup> )   | 120      | 220  | 320   | 120  | 220  |
| Velocidad maxima (rpm)                  | 3000     | 3000 | 3000  | 5000 | 5000 |
| Kt ac (Nm/A)                            | 0,135    |      | 0,071 |      |      |
| Ke ac (V/krpm)                          | 11,6     |      | 5,9   |      |      |
| Encoder de realimentacion (pulsos/rev.) | 2048     |      | 1024  |      |      |
| Fuerza contraelectromotriz (V ac)       | 60       |      |       |      |      |
| Nº Polos motor                          | 8        |      |       |      |      |
| Clase de Aislamiento                    | F        |      |       |      |      |

La información contenida en este catálogo es exacta en el momento en que se procede a su impresión. Pero, con la intención de cumplir con el compromiso de una política de continuos desarrollos y mejoras, Control Techniques se reserva el derecho de cambiar las especificaciones del producto, o los contenidos del catálogo sin previo aviso.

### MM55 Ordering Information

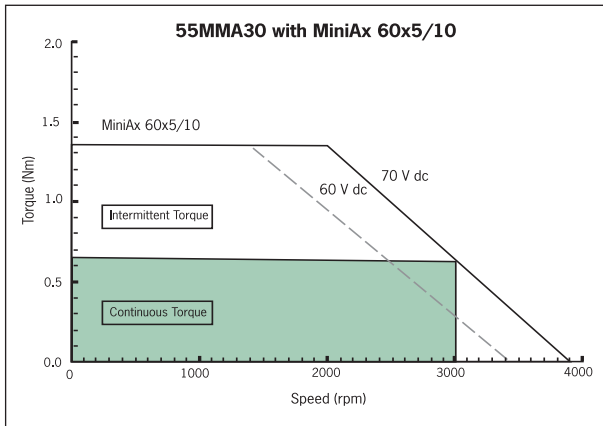


### Recommended encoder connection to Motion Controller for position feedback

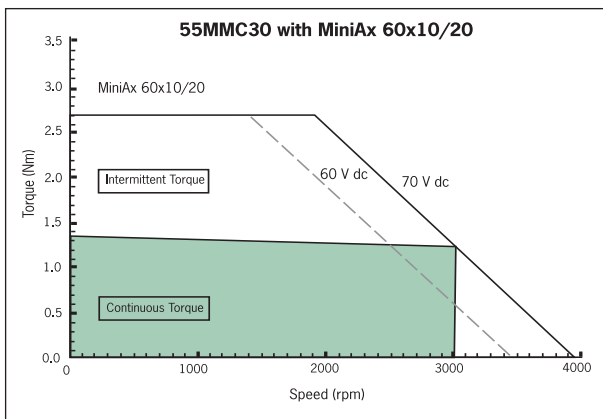
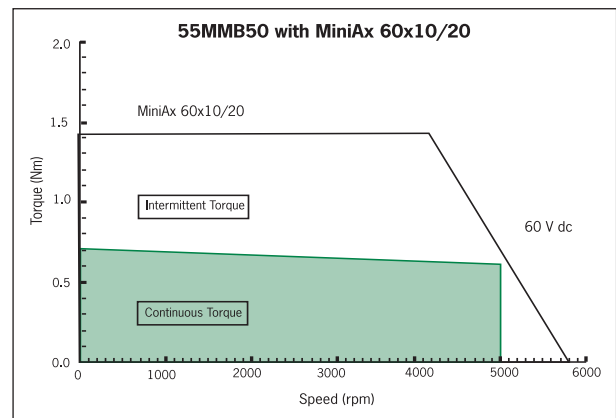
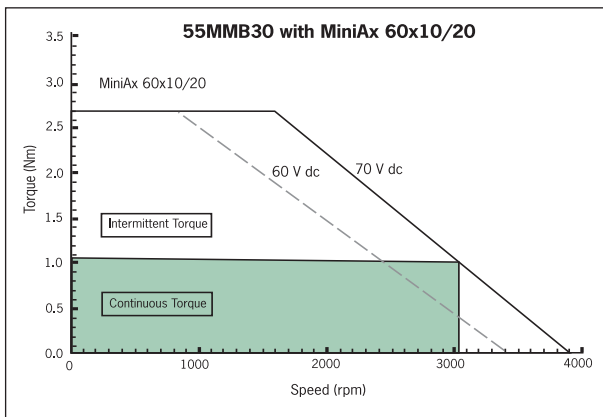
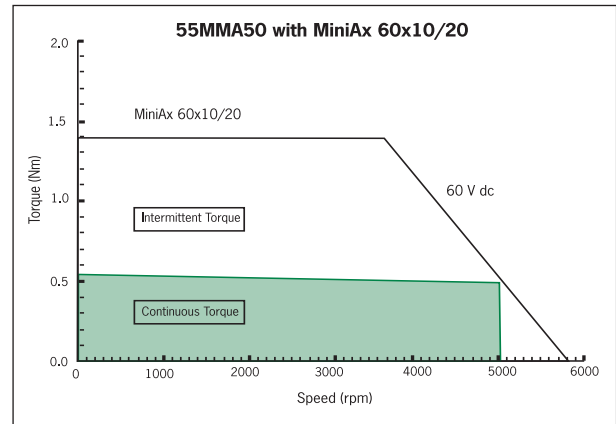


## Speed Torque characteristics for MiniAx and MM55 Motor

### 3000 rpm

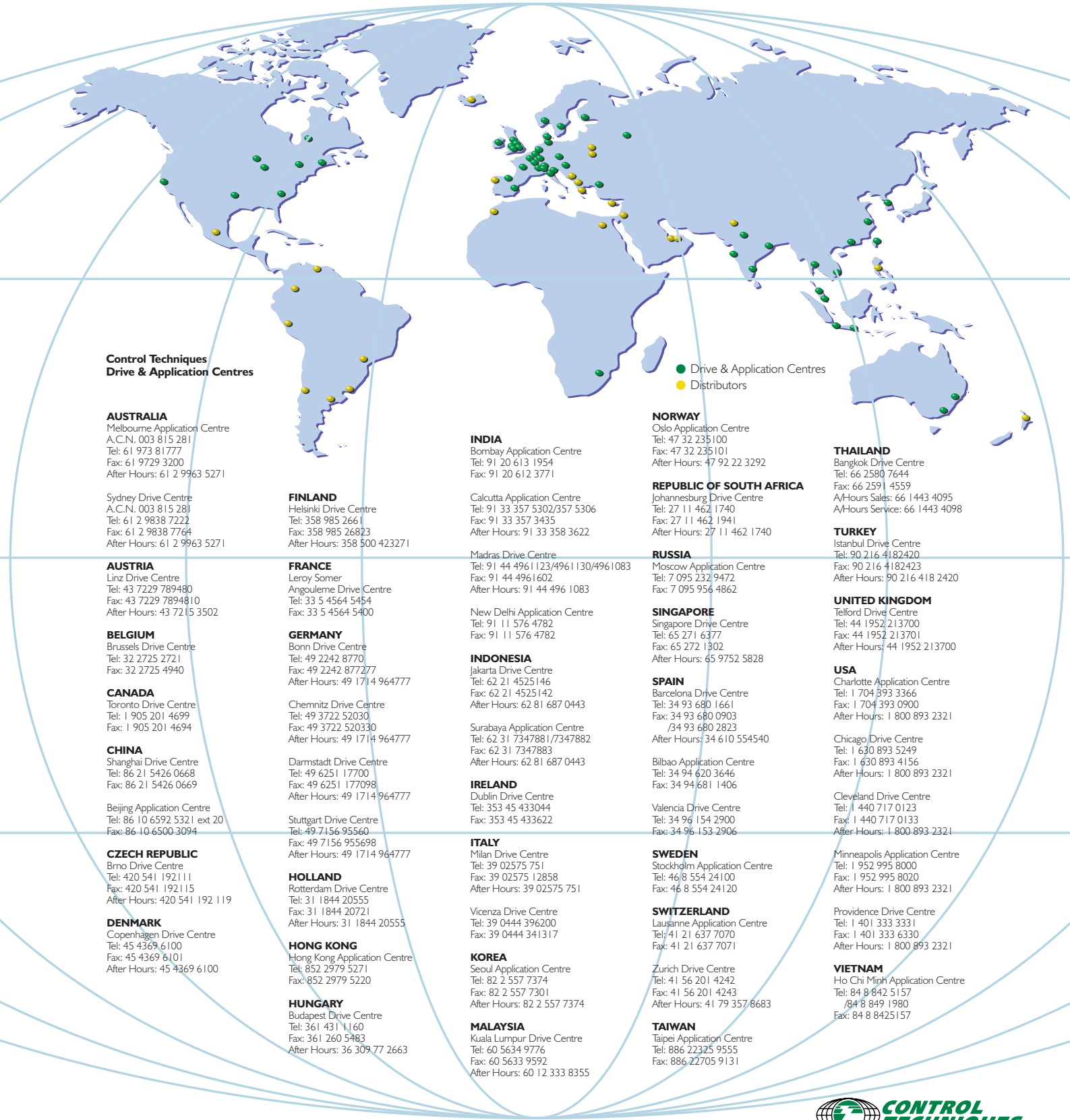


### 5000 rpm



Tests conducted at 25°C room temperature with MiniAx supply at 60 Vdc and 70 Vdc

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