TRIO MOTION TECHNOLOGY

A MEMBER OF THE ESTUN GROUP

TRIO MOTION TECHNOLOGY
DX3 SERVO PACKAGES

- THE MOTION SPECIALIST -

DX3
200V - 480V Servo Solutions
Cost Optimised Servo Drive With STO

TRIO MOTION TECHNOLOGY
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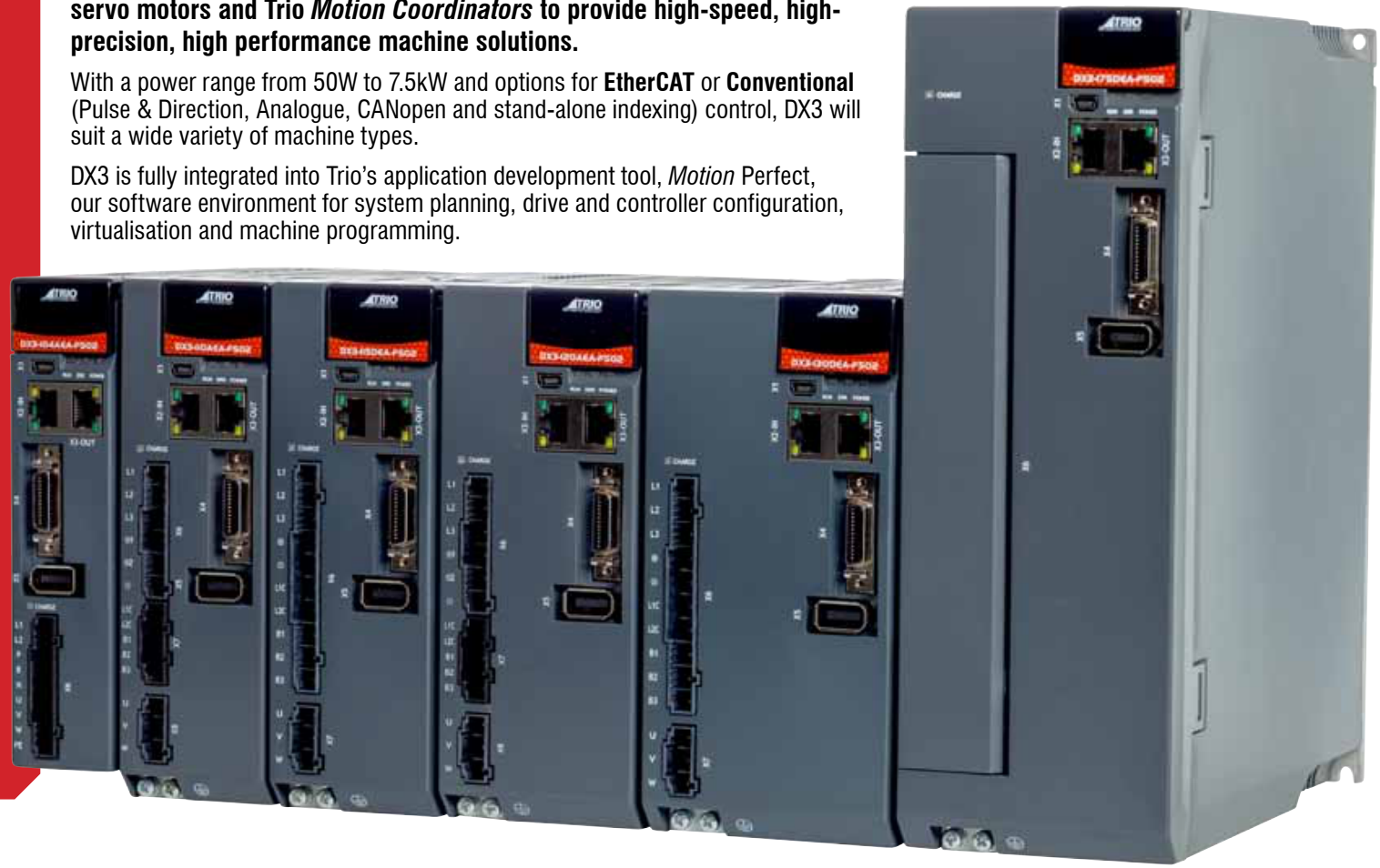
AT A GLANCE

- Fully integrated into *Motion* Perfect
- Matched with Trio's MX motor range
- Internal drive protection functions
- Comprehensive tuning technology
- Functional Safety STO (SIL3, PLe) - EtherCAT dirves only
- Field upgradable firmware
- Electronic motor nameplate
- Compact size
- Zero stacking
- USB or EtherCAT commissioning
- Keypad interface
- 200V ac from 50W to 2kW
- 480V ac from 1kW to 7.5kW
- 350% overload
- Digital I/O
- 2 Touch Probe inputs
- Preset positions, up to 32 stored positions - Conventional drives only (no *Motion Coordinator* required)
- EtherCAT or Conventional (Pulse & Direction, Analogue, CANopen) control

DX3, the single-axis ac servo drive, is designed to create the most cost-effective optimised entry level solution with excellent performance and practical control functions. The Trio DX3 drive is compatible with Trio MX servo motors and Trio *Motion Coordinators* to provide high-speed, high-precision, high performance machine solutions.

With a power range from 50W to 7.5kW and options for **EtherCAT** or **Conventional** (Pulse & Direction, Analogue, CANopen and stand-alone indexing) control, DX3 will suit a wide variety of machine types.

DX3 is fully integrated into Trio's application development tool, *Motion* Perfect, our software environment for system planning, drive and controller configuration, virtualisation and machine programming.



Preliminary specifications may change without notice

DX3
200V - 480V Servo Solutions
Safety Optimised Servo Drive With STO

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Model	# Axes	Power	Voltage	Options	Version	Safety
DX3	- 1	20	A	E	A	- FS02

DX3 comes in power ratings from 50W to 7.5kW. Matched with the MX series motors it offers high-dynamic performance and high-precision with electronic nameplate to simplify configuration for machine solutions.

A5	0.05kW
01	0.1kW
02	0.2kW
04	0.4kW
08	0.75kW
10	1kW
15	1.5kW
20	2kW
30	3kW
50	5kW
75	7.5kW

A	200V ac
D	480V ac

E	EtherCAT
M	Pulse/Dir

A	Revision

200V			480V		
DX3	MXL	MXM	DX3	MXL	MXM
50W	✓	✗	1kW	✗	✓
100W	✓	✗	1.5kW	✓	✓
200W	✓	✗	2kW	✓	✓
400W	✓	✗	3kW	✓	✓
750W	✓	✗	5kW	✓	✓
1kW	✓	✓	7.5kW	✗	✓
1.5kW	✓	✓	✗	✗	✗
2kW	✓	✓	✗	✗	✗

The DX3 EtherCAT drives are equipped with dual safe torque off (STO) inputs. These inputs are safety rated SIL3 level according to IEC 61508, IEC 62061 standards.

STO inputs are used in conjunction with your external E-stop circuits to disable the drive's output power and prevent unintentional motor starting.

It can also reduce wiring, safety switch relays, and extra I/O.

STO is designed to make your equipment safer and reduce cost making the STO function an excellent addition.

Integration Efficiency

Rapid application development of controller and drive configuration within *Motion* Perfect.

Space Efficient

Compact single axis servo drive. Zero stacking to save panel space.

Design Efficient

One system to program, simplifying development and any future production changes when required.

DX3
200V Servo Solutions
Specification

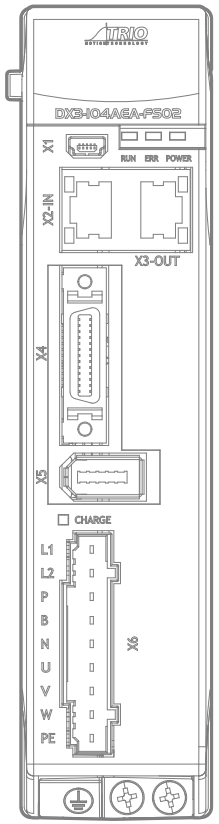
Product	Part #	Output Power	H	W	D
200V ac					
DX3-1A5AEA-FS02	D3100	50W	172	40	180
DX3-1A5AMA	D3120				
DX3-101AEA-FS02	D3101	100W	172	40	180
DX3-101AMA	D3121				
DX3-102AEA-FS02	D3102	200W	172	40	180
DX3-102AMA	D3122				
DX3-104AEA-FS02	D3103	400W	172	40	180
DX3-104AMA	D3123				
DX3-108AEA-FS02	D3104	750W	172	55	180
DX3-108AMA	D3124				
DX3-110AEA-FS02	D3105	1kW	172	55	180
DX3-110AMA	D3125				
DX3-115AEA-FS02	D3106	1.5kW	172	70	180
DX3-115AMA	D3126				
DX3-120AEA-FS02	D3107	2kW	172	70	180
DX3-120AMA	D3127				

200Vac								
Drive Model: DX3-	1A5A	101A	102A	104A	108A	110A	115A	120A
Continuous output current [Arms]	0.9	1.1	1.5	2.9	5.1	6.9	9.5	12.6
Maximum output current [Arms]	3.3	4	5.8	11.5	19.5	21	31.6	42
Main power supply unit capacity [kVA] (single phase)	0.2	0.3	0.6	1.2	1.9	2.6	4.0 *	-
Main power supply capacity [kVA] (three-phase)	-	-	-	-	1.6	2	3	3.5

*: When operating from a single-phase power supply for the DX3-15AEA (rated power 1.5 kW), please derate to 1.2 kW.

Products with **AEA / DEA** = **EtherCAT**
Products with **AMA / DMA** = **Conventional**

Preliminary specifications may change without notice

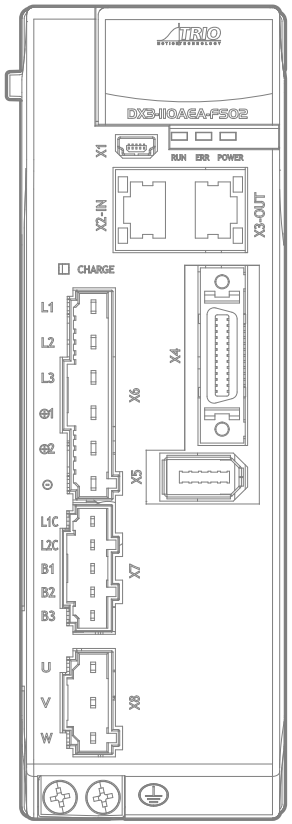


DX3-1A5AEA/AMA

DX3-101AEA/AMA

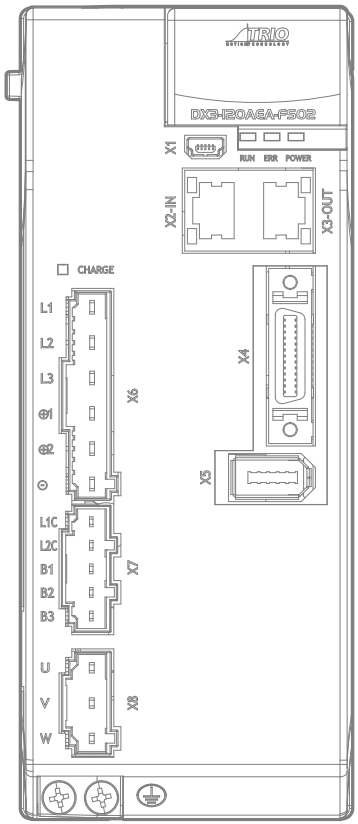
DX3-102AEA/AMA

DX3-104AEA/AMA



DX3-108AEA/AMA

DX3-110AEA/AMA



DX3-115AEA/AMA

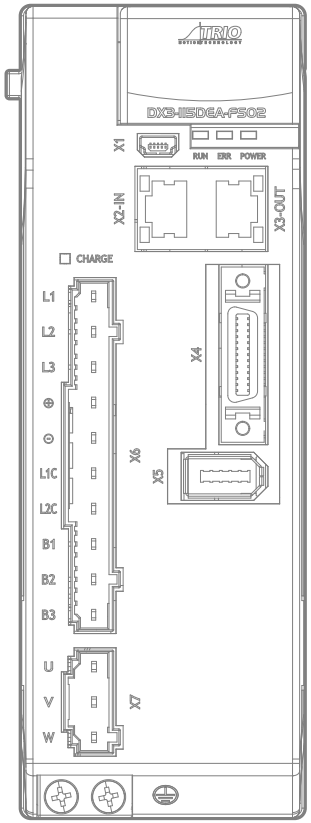
DX3-120AEA/AMA

DX3
480V Servo Solutions
Specification

Product	Part #	Output Power	H	W	D
480V ac					
DX3-110DEA-FS02	D3110	1kW	172	60	180
DX3-110DMA	D3130				
DX3-115DEA-FS02	D3111	1.5kW	172	60	180
DX3-115DMA	D3131				
DX3-120DEA-FS02	D3112	2kW	172	85	180
DX3-120DMA	D3132				
DX3-130DEA-FS02	D3113	3kW	172	85	180
DX3-130DMA	D3133				
DX3-150DEA-FS02	D3114	5kW	260	90	230
DX3-150DMA	D3134				
DX3-175DEA-FS02	D3115	7.5kW	260	90	230
DX3-175DMA	D3135				

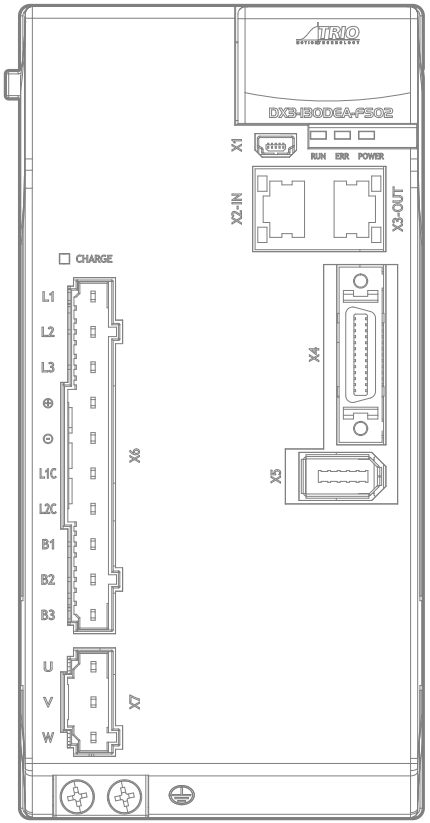
480V ac						
Drive model: DX3-	110D	115D	120D	130D	150D	175D
Continuous output current [Arms]	3.6	5	7.1	12	17	27.3
Maximum output current [Arms]	10.9	16.3	24.7	37.8	53	70.7
Main power supply capacity [kVA] (three-phase)	1.8	2.8	3.5	5	8.2	12

Products with **AEA / DEA** = **EtherCAT**
Products with **AMA / DMA** = **Conventional**



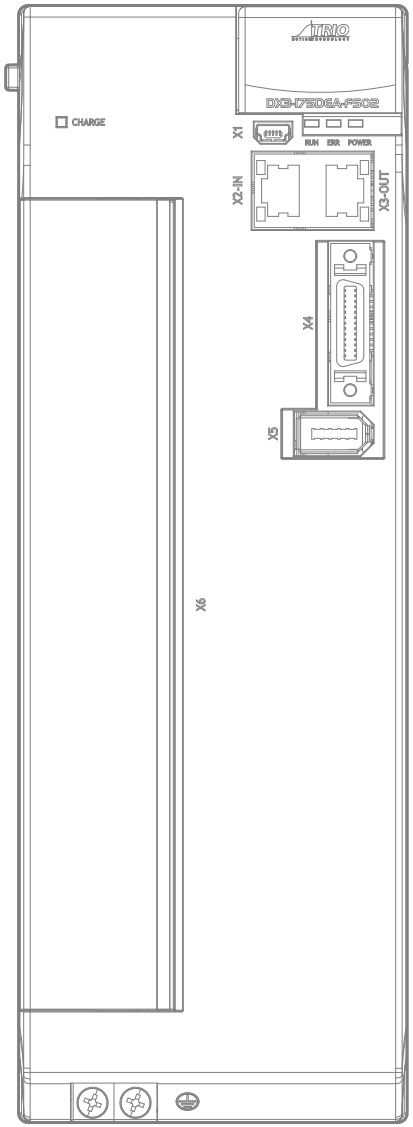
DX3-110DEA/DMA

DX3-115DEA/DMA



DX3-120DEA/DMA

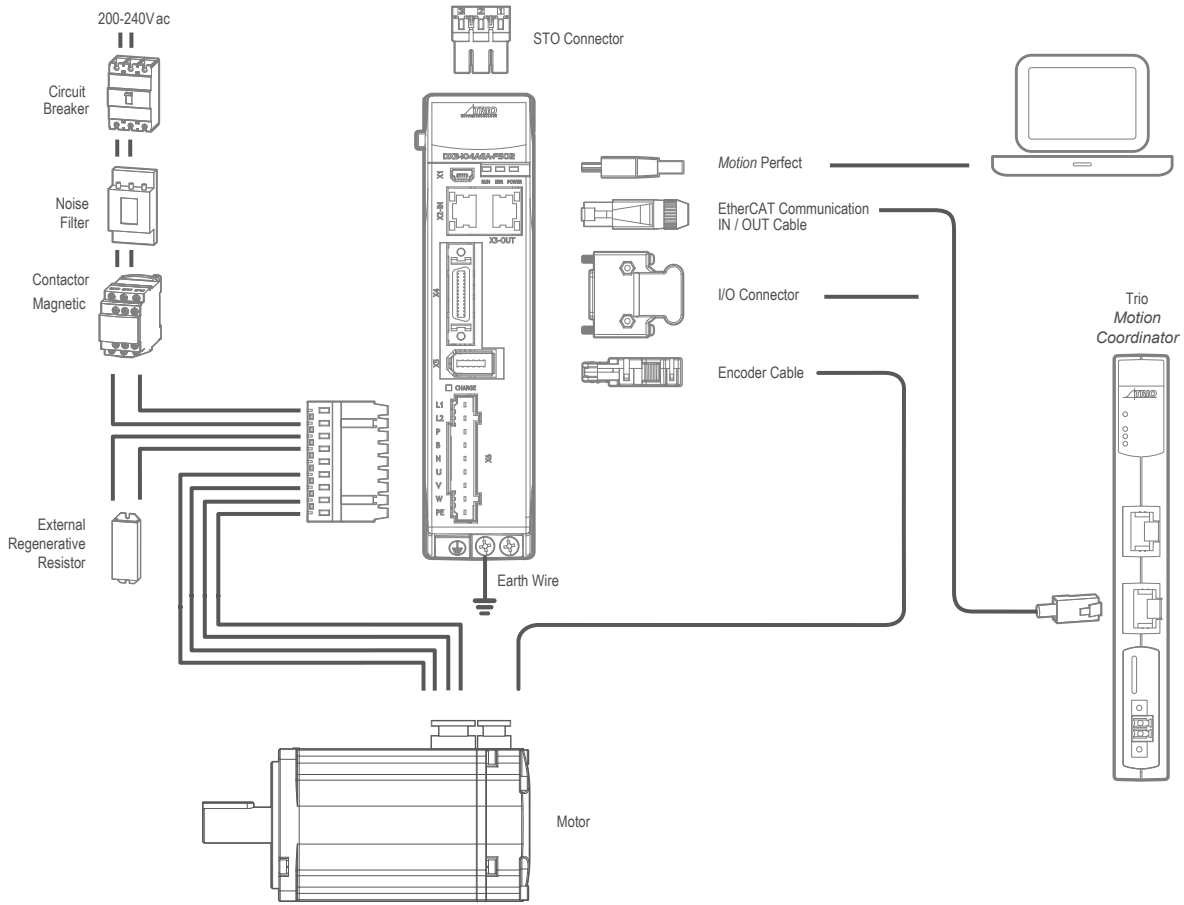
DX3-130DEA/DMA

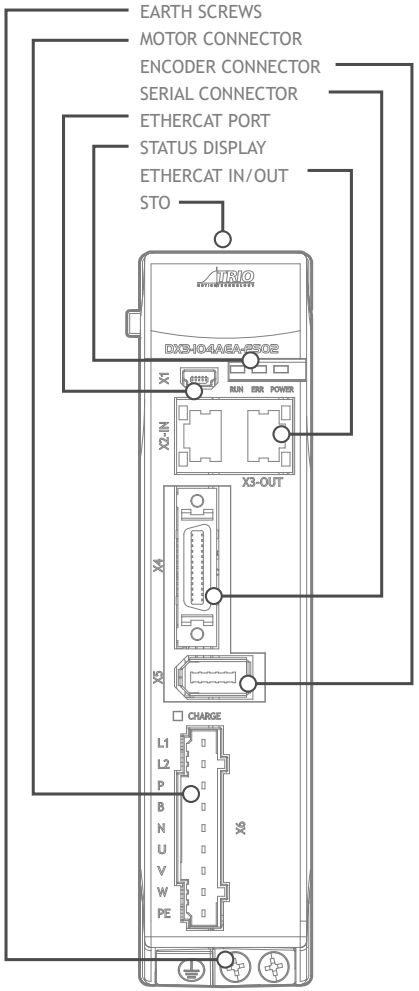


DX3-150DEA/DMA

DX3-175DEA/DMA

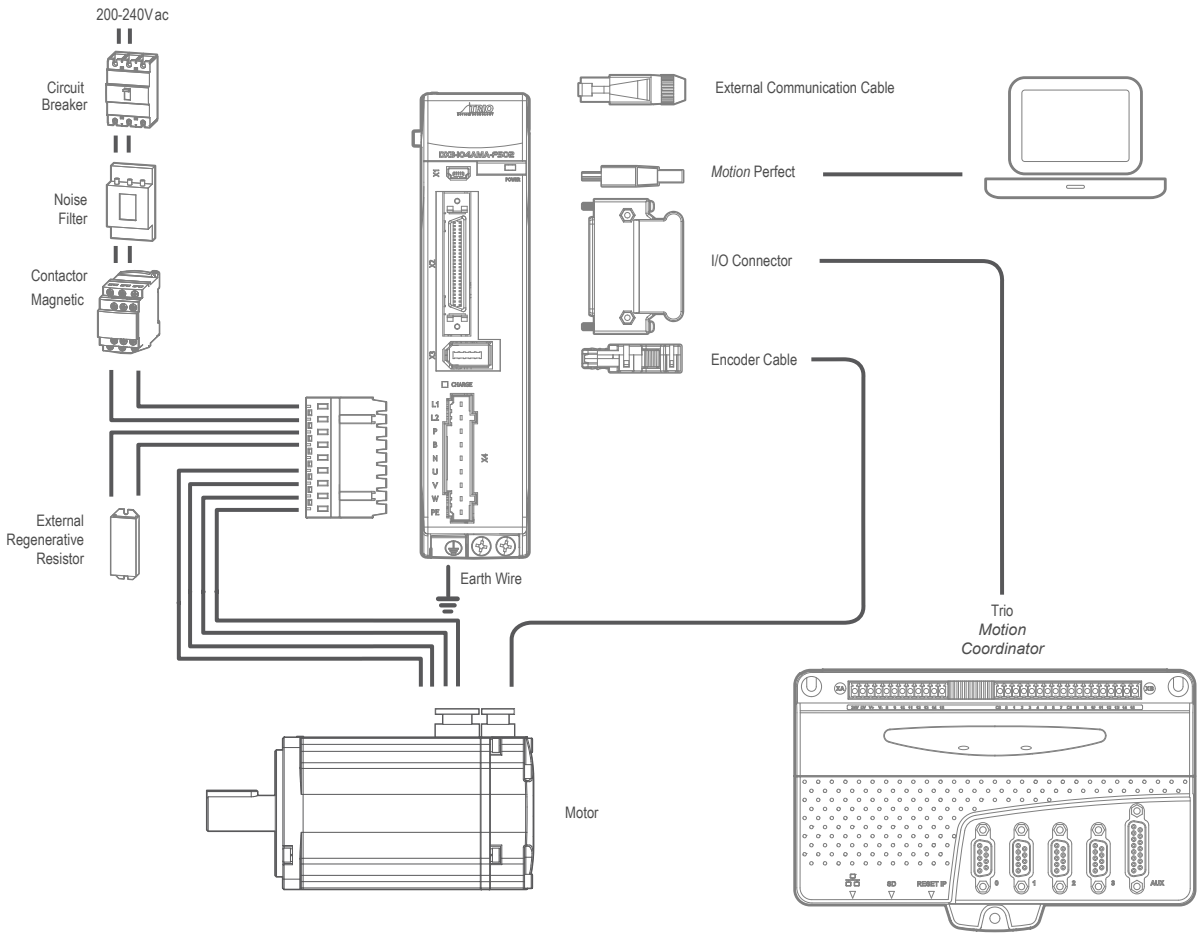
DX3
Wiring Solution Example
EtherCAT Model Configuration (50W - 400W)

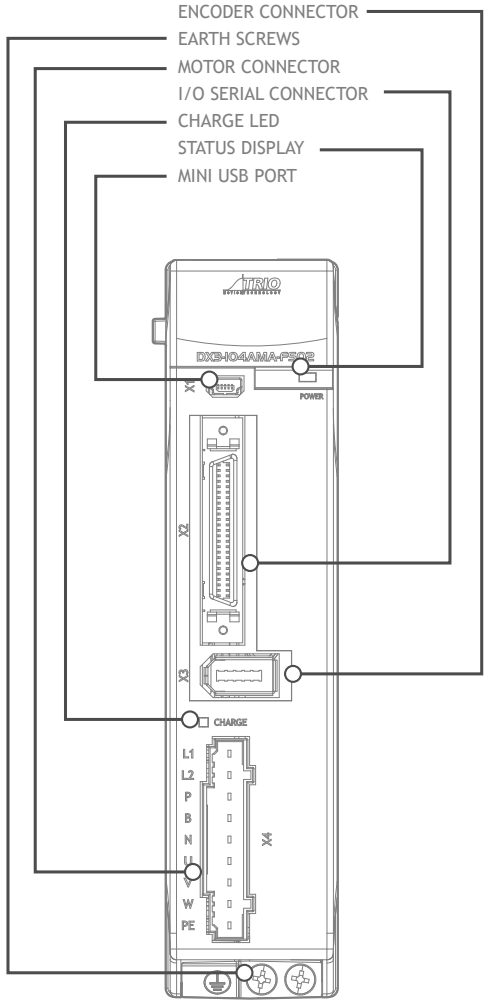




Example illustration showing **AEA / DEA** = **EtherCAT**

DX3
Wiring Solution Example
Conventional Model Configuration (50W - 400W)



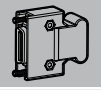


Products ending with **AMA / DMA** = **Conventional**

DX3
200V - 480V Servo Solutions
All Models Specification

Universal specifications			Description
Input power		200VAC	Single-phase AC 200V ~ 240V, -15% ~ +10%, 50Hz / 60Hz
			Three-phase AC 200V ~ 240V, -15% ~ +10%, 50Hz / 60Hz (rated power ≥0.75kW)
		480VAC	Three Phase AC 380V ~ 480V, -15% ~ +10%, 50Hz / 60Hz
Control the power supply		200VAC	Single phase AC 200V ~ 240V, -15% ~ +10%, 50Hz / 60Hz
		480VAC	Three phase AC 380V ~ 480V, -15% ~ +10%, 50Hz / 60Hz
Control mode			SVPWM control
Feedback			Serial communication encoder with MX motors
Terms of use	Working environment	Temperature	When using a single device: -5°C ~ 55°C When multi-device is installed closely: -5 °C ~ 40 °C
		Humidity	5% to 95% RH (no condensation)
	Storage environment	Temperature	-20°C ~ 85°C
		Humidity	5% to 95% RH (no condensation)
	Protection class		IP20
	Altitude		1000m or less
	Vibration resistant		4.9m/s2
	Impact resistant		19.6m/s2
	Power system		TN system
Installation structure			Base mounting
Performance	Speed control range		1:5000
	Speed volatility		The rated speed ± less than 0.01% (when the load fluctuates: 0% to 100%) 0% of the rated speed (voltage fluctuations: at ± 10%) The rated speed is ± below 0.1% (temperature fluctuations: 25°C±25°C)
	Soft-start settings		0 ~10s (acceleration and deceleration can be set separately)
I/O	Encoder Output		A, B, Z differential
	Input signal		Operating voltage range: 24 VDC±20% Number of input channels: 5 on AEA/DEA, 10 on AMA/DMA Touch probe: 2 input channels configurable as touch probe
	Output signal		Operating voltage range: 5 VDC to 30 VDC Number of output channels: 3 on AEA/DEA, 5 on AMA/DMA
USB port	Communication standards		Conforms to USB 2.0 standard (12 Mbps), OTG
Commissioning Ports			USB
			EtherCAT (CoE) (only avaliable on AEA/DEA)
Commisioning Software			*Motion* Perfect
Display			5-digit
Operator Panel			4 buttons
Indicator Lamps			CHARGE, POWER
Regenerative braking			Products with rated power of 50W to 400W do not have built-in braking resistors Products with a power rating of 750W to 7.5kW have built-in braking resistors
Protection features			Overcurrent, overvoltage, undervoltage, overload, regeneration anomaly, overspeed, etc
Accessibility			Alarm recording, Jog operation, load inertia identification, mechanical analyzer, automatic tuning tools, etc

Drive Cables Connectors
All Models Component Selection

Description	Function	
I/O Plug	26-way (Compatable with EtherCAT Models) X0800	
I/O Plug	50-way (Compatable with Conventional Models) X0813	

Preliminary specifications may change without notice

DX3
200V - 480V Servo Solutions

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EtherCAT Model (AEA, DEA) Specification

EtherCAT Specifications	Description
Applicable communication standards	IEC 61158 Type12, IEC 61800-7 CiA402 Drive Profile
Physical layer	100BASE-TX (IEEE802.3)
Bus connection	X2-IN (RJ45): EtherCAT Signal IN
	X3-OUT (RJ45): EtherCAT Signal OUT
Cable	Category 5 twisted pair (4 pairs of shielded twisted pairs).
Sync Manager	SM0: Output mailbox, SM1: Enter mailbox
	SM2: Output process data, SM3: Input process data
FMMU	FMMU0: Maps to the Process Data (RxPDO) output area
	FMMU1: Maps to the Process Data (TxPDO) send zone
	FMMU2: Maps to mailbox status
EtherCAT Commands (Data Link Layer)	APRD, FPRD, BRD, LRD, APWR, FPWR, BWR, LWR, ARMW, FRMW
PDO data	Dynamic PDO mapping
MailBox(CoE)	Emergencies, SDO requests, responses, SDO information (TxPDO/RxPDO and remote TxPDO/ RxPDO are not supported)
MailBox(FoE)	Support FOE firmware upgrade
Distributed Clock (DC)	Free-run mode and DC mode (switchable), DC synchronization period: 125μs to 8ms
Slave Information Interface	2048 bytes (read-only)
CiA402 Drive Profile	Homing mode, Profile position mode,Profile velocity mode, Profile torque mode, Interpolated position mode, Cyclic synchronous position mode, Cyclic synchronous velocity mode, Cyclic synchronous torque mode, Touch probe function, Torque limit function
FoE (File Over EtherCAT)	Download new firmware via FoE
Safe Torque Off	According to IEC 61800-5-2. Cat.4, PLe according to ISO 13849-1, SIL3 according to IEC 61508, IEC 62061.

Conventional Model (AMA, DMA) Specification

Step/Pulse Model Specifications			Description
Torque Control	Analogue reference	Reference Voltage	±10VDC at rated torque Max. input voltage: ±12V
		Input Impedance	10MΩ or above
		Circuit Time Constant	10μs
	Torque Selection	Presets	4 torque selections
Speed Control	Analogue reference	Reference Voltage	±10VDC at rated speed Max. input voltage: ±12V
		Input Impedance	10MΩ or above
		Circuit Time Constant	10μs
	Speed selection	Presets	32 speed selections
Position Control	Pulse reference	Type	Pulse + Direction CCW + CW Pulse A/B Quardature
		Voltage	5V
		Max Frequency	500kHz (differential) 200kHz (single ended)
	Position Selection	Presets	32 position selections
CANopen	CiA402 Drive Profile		Homing mode, Profile position mode, Profile velocity mode, Profile torque mode, Interpolated position mode
Encoder output	Type		A/B/Z Quadrature
	Voltage		5V
	Max Frequency		500kHz (differential)

DX3
EtherCAT
DX Drives Matched to Motors

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EtherCAT Drive and **MXL** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3100	DX3-1A5AEA-FS02	M0950	MXL-A5A0430LA223
D3100	DX3-1A5AEA-FS02	M0952	MXL-A5A0430LA243
D3101	DX3-101AEA-FS02	M0954	MXL-01A0430LA223
D3101	DX3-101AEA-FS02	M0955	MXL-01A0430TA223
D3101	DX3-101AEA-FS02	M0956	MXL-01A0430LA243
D3101	DX3-101AEA-FS02	M0957	MXL-01A0430TA243
D3102	DX3-102AEA-FS02	M0958	MXL-02A0630LA223
D3102	DX3-102AEA-FS02	M0959	MXL-02A0630TA223
D3102	DX3-102AEA-FS02	M0960	MXL-02A0630LA243
D3102	DX3-102AEA-FS02	M0961	MXL-02A0630TA243
D3103	DX3-104AEA-FS02	M0962	MXL-04A0630LA223
D3103	DX3-104AEA-FS02	M0963	MXL-04A0630TA223
D3103	DX3-104AEA-FS02	M0964	MXL-04A0630LA243
D3103	DX3-104AEA-FS02	M0965	MXL-04A0630TA243
D3104	DX3-108AEA-FS02	M0966	MXL-08A0830LA223
D3104	DX3-108AEA-FS02	M0967	MXL-08A0830TA223
D3104	DX3-108AEA-FS02	M0968	MXL-08A0830LA243
D3104	DX3-108AEA-FS02	M0969	MXL-08A0830TA243
D3105	DX3-110AEA-FS02	M0970	MXL-10A0830LA223
D3105	DX3-110AEA-FS02	M0971	MXL-10A0830TA223
D3105	DX3-110AEA-FS02	M0972	MXL-10A0830LA243
D3105	DX3-110AEA-FS02	M0973	MXL-10A0830TA243
D3106	DX3-115AEA-FS02	M0761	MXL-15A1030LB224
D3106	DX3-115AEA-FS02	M0762	MXL-15A1030LB244
D3106	DX3-115AEA-FS02	M0773	MXL-15A1030TB224
D3106	DX3-115AEA-FS02	M0774	MXL-15A1030TB244
D3107	DX3-120AEA-FS02	M0763	MXL-20A1030LB224
D3107	DX3-120AEA-FS02	M0764	MXL-20A1030LB244
D3107	DX3-120AEA-FS02	M0779	MXL-20A1030TB224
D3107	DX3-120AEA-FS02	M0780	MXL-20A1030TB244
D3111	DX3-115DEA-FS02	M0775	MXL-15D1030LB224
D3111	DX3-115DEA-FS02	M0776	MXL-15D1030LB244
D3111	DX3-115DEA-FS02	M0777	MXL-15D1030TB224
D3111	DX3-115DEA-FS02	M0778	MXL-15D1030TB244

EtherCAT Drive and **MXL** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3112	DX3-120DEA-FS02	M0772	MXL-20D1030LB244
D3112	DX3-120DEA-FS02	M0781	MXL-20D1030LB224
D3112	DX3-120DEA-FS02	M0782	MXL-20D1030TB224
D3112	DX3-120DEA-FS02	M0783	MXL-20D1030TB244
D3113	DX3-130DEA-FS02	M0784	MXL-30D1330LA224
D3113	DX3-130DEA-FS02	M0785	MXL-30D1330LA244
D3113	DX3-130DEA-FS02	M0847	MXL-30D1330TA224
D3113	DX3-130DEA-FS02	M0848	MXL-30D1330TA244
D3114	DX3-150DEA-FS02	M0786	MXL-40D1330LA224
D3114	DX3-150DEA-FS02	M0787	MXL-40D1330LA244
D3114	DX3-150DEA-FS02	M0849	MXL-40D1330TA224
D3114	DX3-150DEA-FS02	M0850	MXL-40D1330TA244
D3114	DX3-150DEA-FS02	M0788	MXL-50D1330LA224
D3114	DX3-150DEA-FS02	M0789	MXL-50D1330LA244
D3114	DX3-150DEA-FS02	M0851	MXL-50D1330TA224
D3114	DX3-150DEA-FS02	M0852	MXL-50D1330TA244

EtherCAT Drive and **MXM** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3105	DX3-110AEA-FS02	M0767	MXM-09A1315LA224
D3105	DX3-110AEA-FS02	M0768	MXM-09A1315LA244
D3105	DX3-110AEA-FS02	M0790	MXM-09A1315TA224
D3105	DX3-110AEA-FS02	M0791	MXM-09A1315TA244
D3106	DX3-115AEA-FS02	M0769	MXM-13A1315LA224
D3106	DX3-115AEA-FS02	M0770	MXM-13A1315LA244
D3106	DX3-115AEA-FS02	M0796	MXM-13A1315TA224
D3106	DX3-115AEA-FS02	M0797	MXM-13A1315TA244
D3107	DX3-120AEA-FS02	M0853	MXM-18A1315LA224
D3107	DX3-120AEA-FS02	M0854	MXM-18A1315LA244
D3107	DX3-120AEA-FS02	M0855	MXM-18A1315TA224

EtherCAT Drive and **MXM** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3107	DX3-120AEA-FS02	M0856	MXM-18A1315TA244
D3110	DX3-110DEA-FS02	M0792	MXM-09D1315LA224
D3110	DX3-110DEA-FS02	M0793	MXM-09D1315LA244
D3110	DX3-110DEA-FS02	M0794	MXM-09D1315TA224
D3110	DX3-110DEA-FS02	M0795	MXM-09D1315TA244
D3111	DX3-115DEA-FS02	M0798	MXM-13D1315LA224
D3111	DX3-115DEA-FS02	M0799	MXM-13D1315LA244
D3111	DX3-115DEA-FS02	M0803	MXM-13D1315TA224
D3111	DX3-115DEA-FS02	M0804	MXM-13D1315TA244
D3112	DX3-120DEA-FS02	M0805	MXM-18D1315LA224
D3112	DX3-120DEA-FS02	M0806	MXM-18D1315LA244
D3112	DX3-120DEA-FS02	M0807	MXM-18D1315TA224
D3112	DX3-120DEA-FS02	M0808	MXM-18D1315TA244
D3113	DX3-130DEA-FS02	M0809	MXM-29D1815LA224
D3113	DX3-130DEA-FS02	M0810	MXM-29D1815LA244
D3113	DX3-130DEA-FS02	M0857	MXM-29D1815TA224
D3113	DX3-130DEA-FS02	M0858	MXM-29D1815TA244
D3114	DX3-150DEA-FS02	M0811	MXM-44D1815LA224
D3114	DX3-150DEA-FS02	M0812	MXM-44D1815LA244
D3114	DX3-150DEA-FS02	M0859	MXM-44D1815TA224
D3114	DX3-150DEA-FS02	M0860	MXM-44D1815TA244
D3115	DX3-175DEA-FS02	M0813	MXM-55D1815LA224
D3115	DX3-175DEA-FS02	M0814	MXM-55D1815LA244
D3115	DX3-175DEA-FS02	M0861	MXM-55D1815TA224
D3115	DX3-175DEA-FS02	M0862	MXM-55D1815TA244
D3115	DX3-175DEA-FS02	M0815	MXM-75D1815LA224
D3115	DX3-175DEA-FS02	M0816	MXM-75D1815LA244
D3115	DX3-175DEA-FS02	M0863	MXM-75D1815TA224
D3115	DX3-175DEA-FS02	M0864	MXM-75D1815TA244

Preliminary specifications may change without notice

DX3
Conventional
DX Drives Matched to Motors

TRIO MOTION TECHNOLOGY
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Conventional Drive and **MXL** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3120	DX3-1A5AMA	M0950	MXL-A5A0430LA223
D3120	DX3-1A5AMA	M0952	MXL-A5A0430LA243
D3121	DX3-101AMA	M0954	MXL-01A0430LA223
D3121	DX3-101AMA	M0955	MXL-01A0430TA223
D3121	DX3-101AMA	M0956	MXL-01A0430LA243
D3121	DX3-101AMA	M0957	MXL-01A0430TA243
D3122	DX3-102AMA	M0958	MXL-02A0630LA223
D3122	DX3-102AMA	M0959	MXL-02A0630TA223
D3122	DX3-102AMA	M0960	MXL-02A0630LA243
D3122	DX3-102AMA	M0961	MXL-02A0630TA243
D3123	DX3-104AMA	M0962	MXL-04A0630LA223
D3123	DX3-104AMA	M0963	MXL-04A0630TA223
D3123	DX3-104AMA	M0964	MXL-04A0630LA243
D3123	DX3-104AMA	M0965	MXL-04A0630TA243
D3124	DX3-108AMA	M0966	MXL-08A0830LA223
D3124	DX3-108AMA	M0967	MXL-08A0830TA223
D3124	DX3-108AMA	M0968	MXL-08A0830LA243
D3124	DX3-108AMA	M0969	MXL-08A0830TA243
D3125	DX3-110AMA	M0970	MXL-10A0830LA223
D3125	DX3-110AMA	M0971	MXL-10A0830TA223
D3125	DX3-110AMA	M0972	MXL-10A0830LA243
D3125	DX3-110AMA	M0973	MXL-10A0830TA243
D3126	DX3-115AMA	M0761	MXL-15A1030LB224
D3126	DX3-115AMA	M0762	MXL-15A1030LB244
D3126	DX3-115AMA	M0773	MXL-15A1030TB224
D3126	DX3-115AMA	M0774	MXL-15A1030TB244
D3127	DX3-120AMA	M0763	MXL-20A1030LB224
D3127	DX3-120AMA	M0764	MXL-20A1030LB244
D3127	DX3-120AMA	M0779	MXL-20A1030TB224
D3127	DX3-120AMA	M0780	MXL-20A1030TB244
D3131	DX3-115DMA	M0775	MXL-15D1030LB224
D3131	DX3-115DMA	M0776	MXL-15D1030LB244
D3131	DX3-115DMA	M0777	MXL-15D1030TB224
D3131	DX3-115DMA	M0778	MXL-15D1030TB244

Conventional Drive and **MXL** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3132	DX3-120DMA	M0772	MXL-20D1030LB244
D3132	DX3-120DMA	M0781	MXL-20D1030LB224
D3132	DX3-120DMA	M0782	MXL-20D1030TB224
D3132	DX3-120DMA	M0783	MXL-20D1030TB244
D3133	DX3-130DMA	M0784	MXL-30D1330LA224
D3133	DX3-130DMA	M0785	MXL-30D1330LA244
D3133	DX3-130DMA	M0847	MXL-30D1330TA224
D3133	DX3-130DMA	M0848	MXL-30D1330TA244
D3134	DX3-150DMA	M0786	MXL-40D1330LA224
D3134	DX3-150DMA	M0787	MXL-40D1330LA244
D3134	DX3-150DMA	M0849	MXL-40D1330TA224
D3134	DX3-150DMA	M0850	MXL-40D1330TA244
D3134	DX3-150DMA	M0788	MXL-50D1330LA224
D3134	DX3-150DMA	M0789	MXL-50D1330LA244
D3134	DX3-150DMA	M0851	MXL-50D1330TA224
D3134	DX3-150DMA	M0852	MXL-50D1330TA244

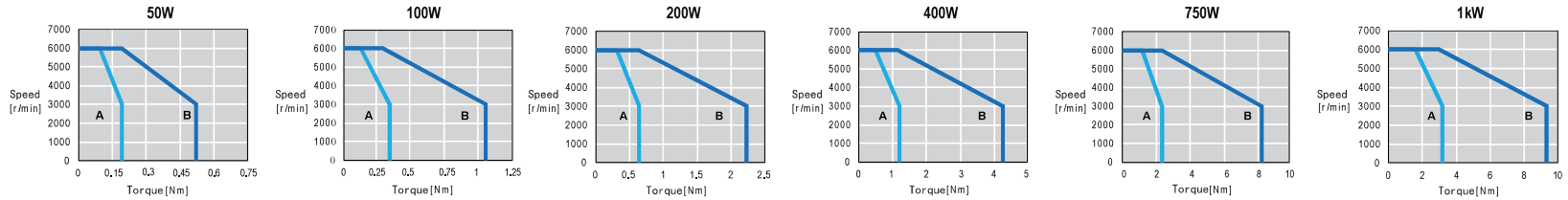
Conventional Drive and **MXM** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3125	DX3-110AMA	M0767	MXM-09A1315LA224
D3125	DX3-110AMA	M0768	MXM-09A1315LA244
D3125	DX3-110AMA	M0790	MXM-09A1315TA224
D3125	DX3-110AMA	M0791	MXM-09A1315TA244
D3126	DX3-115AMA	M0769	MXM-13A1315LA224
D3126	DX3-115AMA	M0770	MXM-13A1315LA244
D3126	DX3-115AMA	M0796	MXM-13A1315TA224
D3126	DX3-115AMA	M0797	MXM-13A1315TA244
D3127	DX3-120AMA	M0853	MXM-18A1315LA224
D3127	DX3-120AMA	M0854	MXM-18A1315LA244
D3127	DX3-120AMA	M0855	MXM-18A1315TA224

Conventional Drive and **MXM** Compatibility			
Drive Part #	Drive Model	Motor Part #	Motor Model
D3127	DX3-120AMA	M0856	MXM-18A1315TA244
D3130	DX3-110DMA	M0792	MXM-09D1315LA224
D3130	DX3-110DMA	M0793	MXM-09D1315LA244
D3130	DX3-110DMA	M0794	MXM-09D1315TA224
D3130	DX3-110DMA	M0795	MXM-09D1315TA244
D3131	DX3-115DMA	M0798	MXM-13D1315LA224
D3131	DX3-115DMA	M0799	MXM-13D1315LA244
D3131	DX3-115DMA	M0803	MXM-13D1315TA224
D3131	DX3-115DMA	M0804	MXM-13D1315TA244
D3132	DX3-120DMA	M0805	MXM-18D1315LA224
D3132	DX3-120DMA	M0806	MXM-18D1315LA244
D3132	DX3-120DMA	M0807	MXM-18D1315TA224
D3132	DX3-120DMA	M0808	MXM-18D1315TA244
D3133	DX3-130DMA	M0809	MXM-29D1815LA224
D3133	DX3-130DMA	M0810	MXM-29D1815LA244
D3133	DX3-130DMA	M0857	MXM-29D1815TA224
D3133	DX3-130DMA	M0858	MXM-29D1815TA244
D3134	DX3-150DMA	M0811	MXM-44D1815LA224
D3134	DX3-150DMA	M0812	MXM-44D1815LA244
D3134	DX3-150DMA	M0859	MXM-44D1815TA224
D3134	DX3-150DMA	M0860	MXM-44D1815TA244
D3135	DX3-175DMA	M0813	MXM-55D1815LA224
D3135	DX3-175DMA	M0814	MXM-55D1815LA244
D3135	DX3-175DMA	M0861	MXM-55D1815TA224
D3135	DX3-175DMA	M0862	MXM-55D1815TA244
D3135	DX3-175DMA	M0815	MXM-75D1815LA224
D3135	DX3-175DMA	M0816	MXM-75D1815LA244
D3135	DX3-175DMA	M0863	MXM-75D1815TA224
D3135	DX3-175DMA	M0864	MXM-75D1815TA244

MXL
Motor (50 w – 1 kw)

TRIO MOTION TECHNOLOGY
A MEMBER OF THE ESTUN GROUP

Low inertia high speed (MXL) servo motor



A: Continuous working area B: Repetitive work area

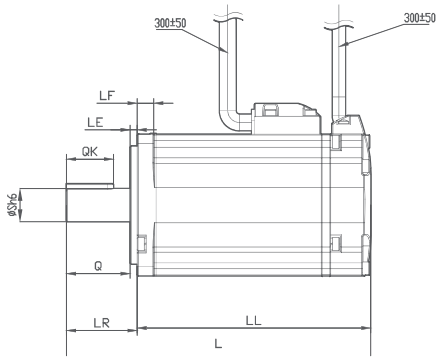
- Rated speed 3000RPM, Brake/no-brake options are supported
- 17-bit absolute or 23-bit absolute encoder
- Protection class IP65
- With oil seal as standard
- Input power: 200VAC

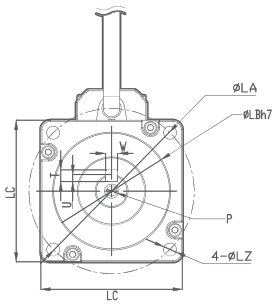
Servo motor parameters		50W	100W	200W	400W	750W	1kW
Rated output	kW	0.05	0.1	0.2	0.4	0.75	1
Rated torque	N · m	0.159	0.318	0.63	1.27	2.39	3.18
Instantaneous peak torque	N · m	0.557	1.11	2.21	4.45	8.37	9.55
Rated current	Arms	0.9	1.1	1.5	2.9	5.1	6.9
Instantaneous maximum current	Arms	3.3	4.0	5.8	11.5	19.5	21.0
Rated speed	r/min	3000					
Highest speed	r/min	6000					
Motor inertia	×10−4kg · m²	0.023 (0.0268)	0.0428 (0.0465)	0.147 (0.179)	0.244 (0.276)	0.909 (1.07)	1.14 (1.30)
Brake rated voltage		DC24V±10%					
Brake rating	W	4.0		7.4		9.6	
Brake torque rating	Nm	0.32		1.5		3.2	
Encoder		17 bit absolute value; 23 bit absolute value					
Insulation class		F					
Environment temperature		0° C ~ +40° C (No freeze)					
Environmental humidity		20%~80% RH (No coagulate frost)					
Vibration resistance		vibration: dynamic≤49m/s²(5G); static≤24.5m/s²; Impact resistant≤98m/s²(10G)					
Guard mode		Totally enclosed, self cooling, IP65					

- The values in parentheses represent the values of motors with brakes.

Specifications are subject to change without prior notice

MXL
Motor(50W-1kW)



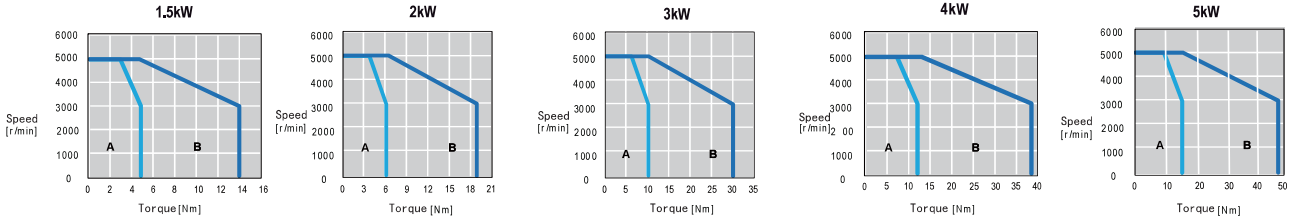


Power	MXL-	L	LL	Flange Dimensions							S	Threaded hole x depth	key				
				LR	LE	LF	LC	LA	LB	LZ			QK	W	T	U	Q
50W	A5A0430L	87.5 (121)	62.5 (96)	25	2.5	5	40	46	30	4.3	8	M3X6	14	3	3	1.8	22.5
100W	01A0430L	103.5 (137)	78.5 (112)	25	2.5	5	40	46	30	4.3	8	M3X6	14	3	3	1.8	22.5
200W	02A0630L	108 (137)	78 (107)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
400W	04A0630L	129 (158)	99 (128)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
750W	08A0830L	141 (184)	111 (144)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37
1kW	10A0830L	155 (198)	125 (158)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37
200W	02A0630F	126.5 (155.5)	96.5 (125.5)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
400W	04A0630F	147.5 (176.5)	117.5 (146.5)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
750W	08A0830F	169.5 (202.5)	129.5 (162.5)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37
1kW	10A0830F	183.5 (216.5)	143.5 (176.5)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37

MXL	-	Rated output		Voltage grade		Flange dimensions		Rated speed		Encoder		Design order		Shaft end		Options		Plug type	
		A5	50W	A	200VAC	04	40mm	30	3000 RPM	T	17-bits absolute	A	-	2	with keys	2	With oil seal	2	Line waterproofing
		01	100W			06	60mm			L	23-bits absolute					4	With oil seal With brake		
		02	200W			08	80mm												
		04	400W																
		08	750W																
		10	1kW																

MXL
Motor(1.5kW-5kW)

Low inertia high speed (MXL) servo motor

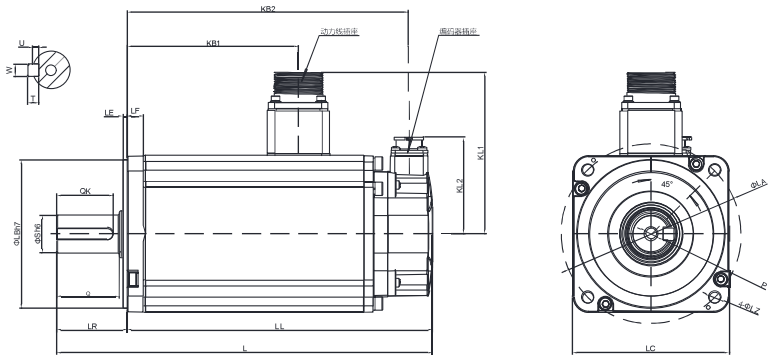


- Rated speed 3000RPM, Brake/no-brake options are supported
- 17-bit absolute or 23-bit absolute encoder
- Protection class IP65
- With oil seal as standard
- Input power: 200VAC

Servo motor parameters		200VAC		400VAC				
		1.5kW	2kW	1.5kW	2kW	3kW	4kW	5kW
Rated output	kW	1.5	2	1.5	2	3	4	5
Rated torque	N · m	4.78	6.37	4.78	6.37	9.80	12.8	15.9
Instantaneous peak torque	N · m	14.3	19.1	14.3	19.1	29.4	38.4	47.7
Rated current	Arms	9.5	12.6	4.9	6.4	10.5	13.0	15.9
Instantaneous maximum current	Arms	31.6	42.0	16.3	20.5	33.0	40.0	50.0
Rated speed	r/min	3000						
Highest speed	r/min	5000						
Motor inertia	×10-4kg · m²	2.33 (3.10)	2.95 (3.72)	2.33 (3.10)	2.95 (3.72)	7.72 (9.00)	10.24 (11.6)	14 (15.4)
Brake rated voltage		DC24V ± 10%						
Brake rating	W	14.4				23		
Brake torque rating	Nm	8				20		
Encoder		17 bit absolute value; 23 bit absolute value						
Insulation class		F						
Environment temperature		0° C ~ +40° C (No freeze)						
Environmental humidity		20%~80% RH (No coagulate frost)						
Vibration resistance		vibration: dynamic≤49m/s²(5G); static≤24.5m/s²; Impact resistant≤98m/s²(10G)						
Guard mode		Totally enclosed, self cooling, IP65						

- The values in parentheses represent the values of motors with brakes.

MXL
Motor(1.5kW-5kW)



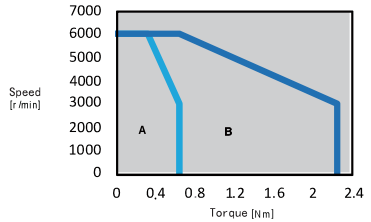
Power	MXL-	L	LL	Flange Dimensions							S	Threaded hole x depth	key				
				LR	LE	LF	LC	LA	LB	LZ			QK	W	T	U	Q
1.5kW	15A1030L	210 (240)	165 (195)	45	3	10	100	115	95	7	24	M8X16	36	8	7	4	40
2.0kW	20A1030L	230 (260)	185 (215)	45	3	10	100	115	95	7	24	M8X16	36	8	7	4	40
3.0kW	30A1330L	257 (289.5)	194 (226.5)	63	6	12	130	145	110	9	28	M8X16	54	8	7	4	55
4.0kW	40A1330L	284 (316.5)	221 (253.5)	63	6	12	130	145	110	9	28	M8X16	54	8	7	4	55
5.0kW	50A1330L	324 (356.5)	261 (293.5)	63	6	12	130	145	110	9	28	M8X16	54	8	7	4	55

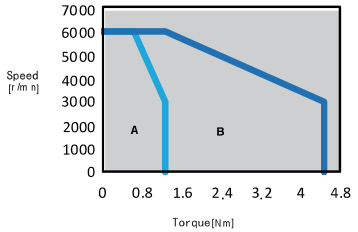
MXL	-	Rated output	Voltage grade	Flange dimensions	Rated speed	Encoder	Design order	Shaft end	Options	Plug type
		A5 50W	A 200VAC	04 40mm	30 3000 RPM	T 17-bits absolute	A -	2 with keys	2 With oil seal	2 Line waterproofing
		01 100W		06 60mm		L 23-bits absolute			4 With oil seal With brake	
		02 200W		08 80mm						
		04 400W								
		08 750W								
		10 1kW								

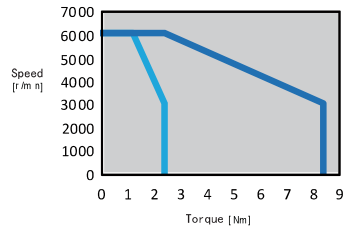
15

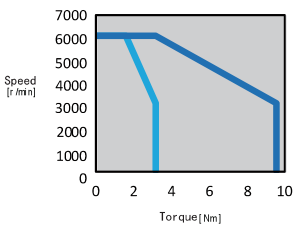
MXJ
Motor(200W-1kW)

Medium inertia high speed servo motor









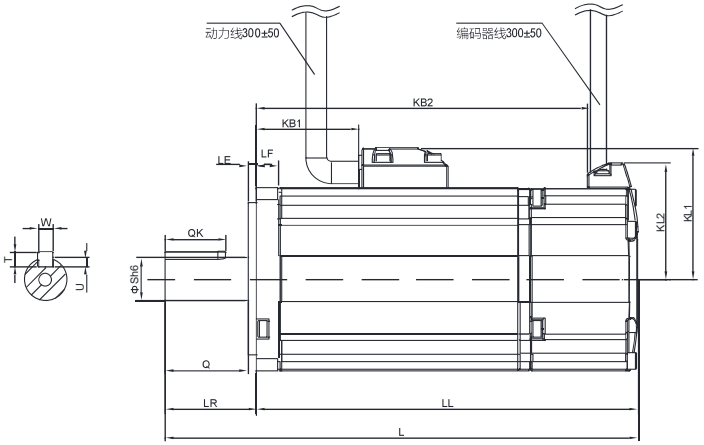
A: Continuous working area B: Repetitive work area

- Rated speed 3000RPM, Brake/no-brake options are supported
- 17-bit absolute or 23-bit absolute encoder
- Protection class IP65
- With oil seal as standard
- Input power: 200VAC

Servo motor parameters		200W	400W	750W	1kW
Rated output	kW	0.2	0.4	0.75	1
Rated torque	N·m	0.637	1.27	2.39	3.18
Instantaneous peak torque	N·m	2.23	4.46	8.37	9.54
Rated current	Arms	1.5	2.8	5.1	7.1
Instantaneous maximum current	Arms	5.8	11.2	19.5	22.0
Rated speed	r/min	3000			
Highest speed	r/min	6000			
Motor inertia	$\times 10^{-4}$kg·m²	0.33 (0.36)	0.64 (0.68)	1.64 (1.69)	2.26 (2.41)
Weight	kg	0.9(1.0)	1.3(1.4)	2.3(2.9)	3.1(3.8)
Brake rated voltage		DC24V±10%			
Brake rating	W	7.4		9.6	
Brake torque rating	Nm	1.5		3.2	
Encoder		17 bit absolute value; 23 bit absolute value			
Insulation class		F			
Environment temperature		0° C ~ +40° C (No freeze)			
Environmental humidity		20%~80% RH (No coagulate frost)			
Vibration resistance		vibration: dynamic≤49m/s²(5G); static≤24.5m/s²; Impact resistant≤98m/s²(10G)			
Guard mode		Totally enclosed, self cooling, IP65			

- The values in parentheses represent the values of motors with brakes.

MXJ
Motor(200W-1kW)



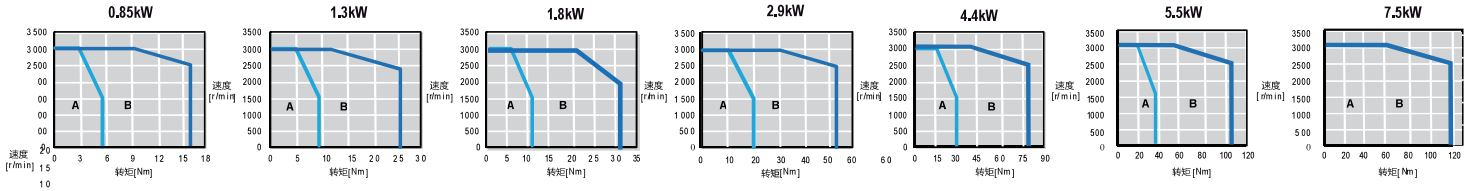
Power	MXJ-	L	LL	Flange Dimensions							S	Threaded hole x depth	key				
				LR	LE	LF	LC	LA	LB	LZ			QK	W	T	U	Q
200W	02A0630L	108 (137)	78 (107)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
400W	04A0630L	129 (158)	99 (128)	30	3	7	60	70	50	5.5	14	M5X12	20	5	5	3	27
750W	08A0830L	142 (175)	102 (135)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37
1kW	10A0830L	157 (190)	117 (150)	40	3	8	80	90	70	6.6	19	M6X12	25	6	6	3.5	37

- The values in parentheses represent the values of motors with brakes.

MXJ	-	Rated output	Voltage grade	Flange dimensions	Rated speed	Encoder	Design order	Shaft end	Options	Plug type
		02 200W	A 200VAC	06 60mm	30 3000 RPM	T 17-bits absolute	A -	2 with keys	2 With oil seal	2 Line waterproofing
		04 400W		08 80mm		L 23-bits absolute			4 With oil seal With brake	
		08 750W								
		10 1kW								

MXM
Motor(0.85kW-7.5kW)

Medium inertia medium speed（MXM)Servo motor



A: 连续工作区域　B: 反复工作区域

Rated speed1500RPM,
Brake/no-brake options are supported

17-bit absolute or 23-bit absolute encoder

Protection class IP65

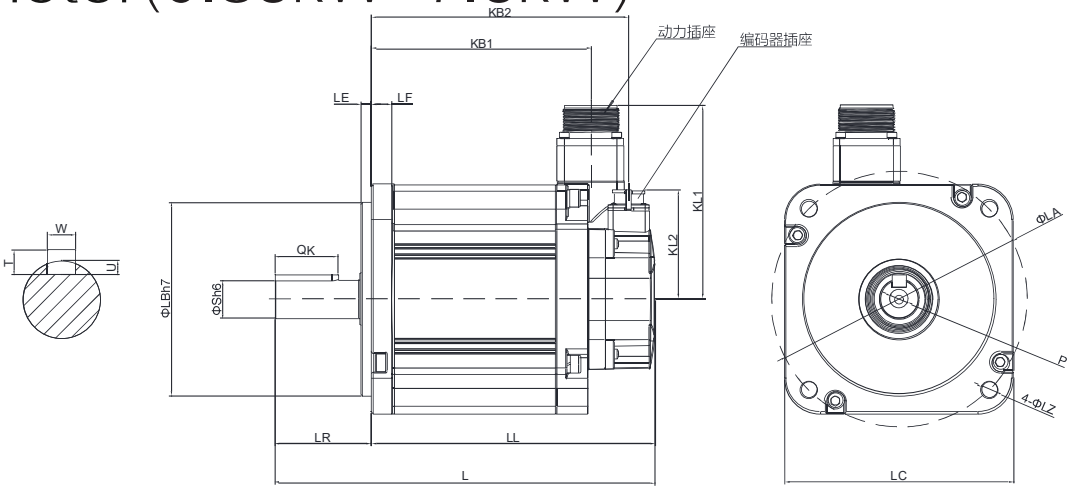
With oil seal as standard

Input power: 200VAC

Servo motor parameters		200VAC			400VAC						
		0.85kW	1.3kW	1.8kW	0.85kW	1.3kW	1.8kW	2.9kW	4.4kW	5.5kW	7.5kW
Rated output	kW	0.85	1.3	1.8	0.85	1.3	1.8	2.9	4.4	5.5	7.5
Rated torque	N·m	5.41	8.28	11.5	5.41	8.28	11.5	18.6	28.4	35.0	48.0
Instantaneous peak torque	N·m	16.2	24.8	31.0	16.2	24.8	31.0	55.8	80.0	105	120
Rated current	Arms	6.8	9.7	14.5	3.4	5.0	7.1	11.5	16.8	20.3	26.5
Instantaneous maximum current	Arms	22.6	29.7	42	10.9	15.6	21.2	37.0	49.5	64.0	70.0
Rated speed	r/min	1500									
Highest speed	r/min	2000									
Motor inertia	$\times 10^{-4}$kg·m²	11.9 (12.5)	17.3 (17.9)	22.3 (22.9)	11.9 (12.5)	17.3 (17.9)	22.3 (22.9)	43.4 (49.2)	58.8 (64.6)	85.5 (91.5)	116.8 (123)
Weight	kg	5.6(7.3)	7(8.7)	8.3(10.0)	5.6(7.3)	7(8.7)	8.3(10.0)	14.6(18.8)	17.6(21.8)	23.2(27.8)	29(33.6)
Brake rated voltage		DC24V±10%									
Brake rating	W	23						36		36	
Brake torque rating	N·m	20						44		72	
Encoder		17 bit absolute value; 23 bit absolute value									
Insulation class		F									
Environment temperature		0° C ~ +40° C (No freeze)									
Environmental humidity		20%~80% RH (No coagulate frost)									
Vibration resistance		24.5m/s²									
Guard mode		Self-cooling, IP65 (Cable plug not included)									

- The values in parentheses represent the values of motors with brakes.

MXM
Motor(0.85kW-7.5kW)



Power	MXM-	L	LL	KB1	KB2	KL1	KL2	Flange Dimensions							S	Threaded hole x depth	key			
								LR	LE	LF	LC	LA	LB	LZ			QK	W	T	U
0.85KW	09□1315	185 (215)	131 (161.0)	94.5	116 (146)	112	58.5	55	6	12	130	145	110	9	22	M6×20	32	8	7	4
1.3KW	13□1315	200 (230.0)	146 (176.0)	109.5	131 (161)															
1.8KW	18□1315	215 (245.0)	161 (191.0)	124.5	146 (176)															
2.9KW	29D1815	239 (284)	160 (205)	135.5 (139.8)	145.5 (190.2)	142	62	79	3.2	18	180	200	114.3	13.5	35	M8×16	65	10	8	3
4.4KW	44D1815	258 (303)	179 (224)	154.5 (158.8)	164.5 (209.2)	142	62	79	3.2	18	180	200	114.3	13.5	35	M8×16	65	10	8	3
5.5KW	55D1815	324 (377)	221 (264)	186.5 (198.8)	196.5 (249.2)	142	62	113	3.2	18	180	200	114.3	13.5	42	M8×16	96	12	10	3
7.5KW	75D1815	360 (413)	247 (300)	222.5 (234.8)	232.5 (285.2)	142	62	113	3.2	18	180	200	114.3	13.5	42	M8×16	96	12	10	3

MXM -

Rated output	
09	0.85kW
13	1.3kW
18	1.8kW
29	2.9kW
44	4.4 kW
55	5.5 kW
75	7.5 kW

Voltage grade	
A	200VAC
D	400VAC

Flange dimensions	
13	130mm
18	180mm

Rated speed	
15	1500 RPM

Encoder	
T	17-bits absolute
L	23-bits absolute

Design order	
A	-
B	
D	-

Shaft end	
2	with keys

Options	
2	With oil seal
4	With oil seal With brake

Plug type	
4	Aviation plug

Motion iX

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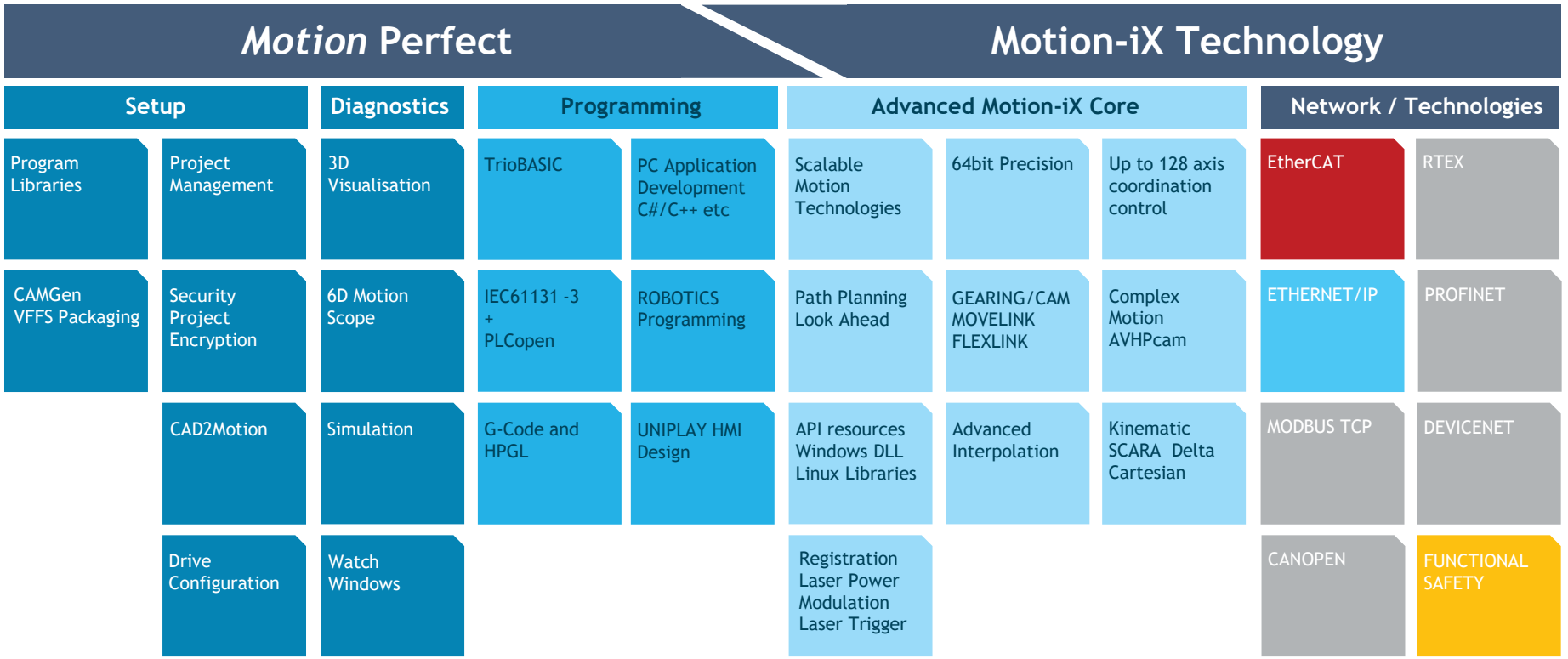
Motion Optimal Engineering Technologies



Combining an advanced motion core with Trio's ease-of-use, Motion-iX offers performance and dependability of packaged solutions, from "The Motion Specialist", where motion is the core and not just a bolt-on capability.

Motion-iX – a unified software engineering framework for machine development, that places the focus on optimising motion and complex kinematics, including robotics such as SCARA, to deliver truly optimal machine control performance.

Motion-iX includes development in IEC61131 and PLCopen, and boasts inverse kinematics capabilities to truly coordinate all machine axes as one, including robots to maintain tight synchronisation or robots and machine as one. Virtualization allows simulation of the mechanics and motion to significantly reduce development and testing, delivering optimal control every time, by minimising machine cycle times.

Preliminary specifications may change without notice

Motion Perfect

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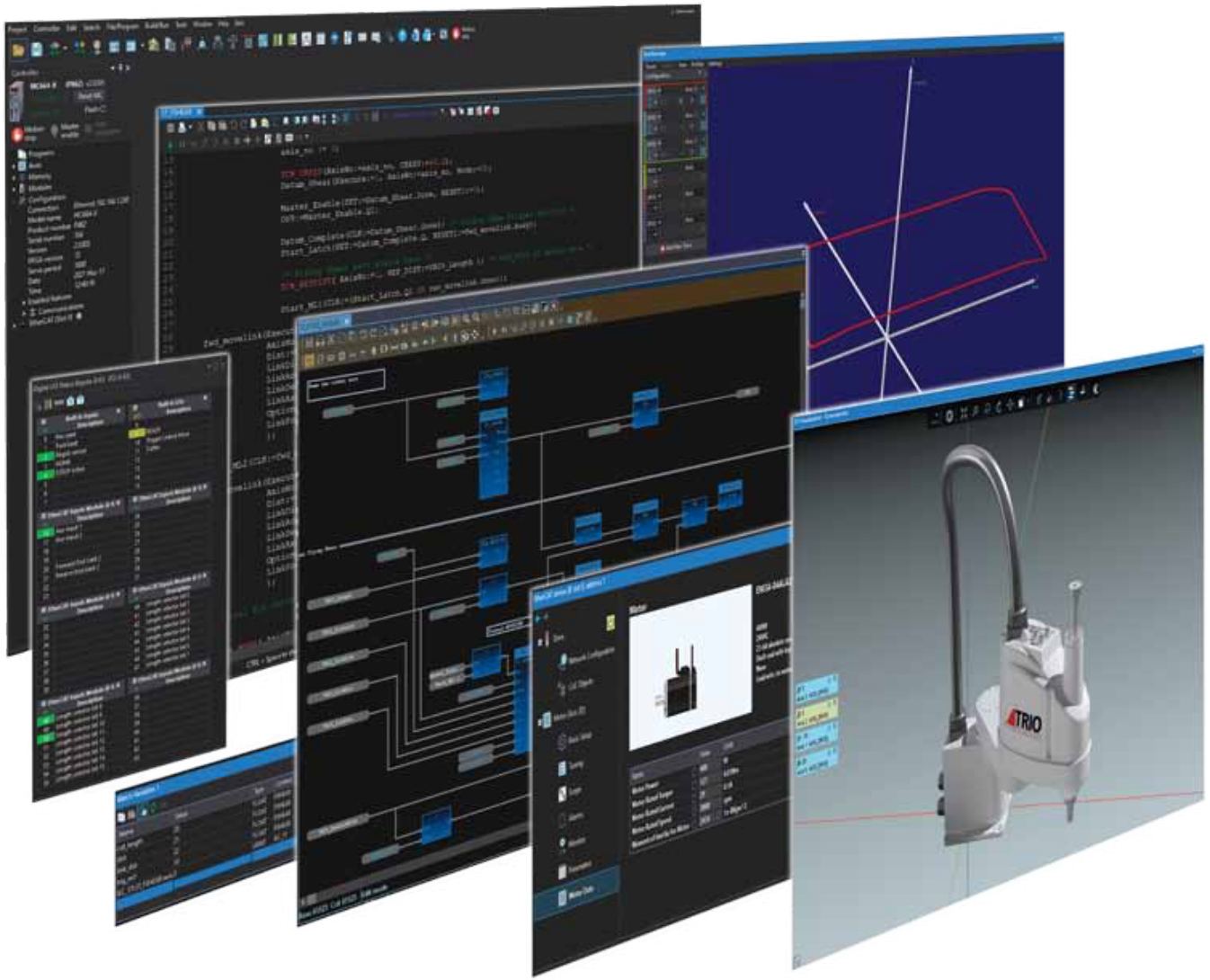
Design, Develop, Test, Deploy and Secure

Built on Trio's **Motion-iX** core technology, *Motion* Perfect provides the user with a re-designed easy to understand interface for rapid application development, controller and drive configuration and monitoring of functions.



The commissioning of DX Servo Drives is made simple with a series of Device Configuration Screens allowing access to status information and diagnostics at a glance. All motor axes can be detected, setup, monitored and controlled in real-time from the easy to use dialogue windows.

Motion Perfect includes access to IEC 61131 and PLCopen and the robotics solution; TrioRPS. Advanced visualisation including a 3D oscilloscope and IP protection of your projects are also included within *Motion* Prefect.

Everything you need... Nothing more

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TRIO
Worldwide Network

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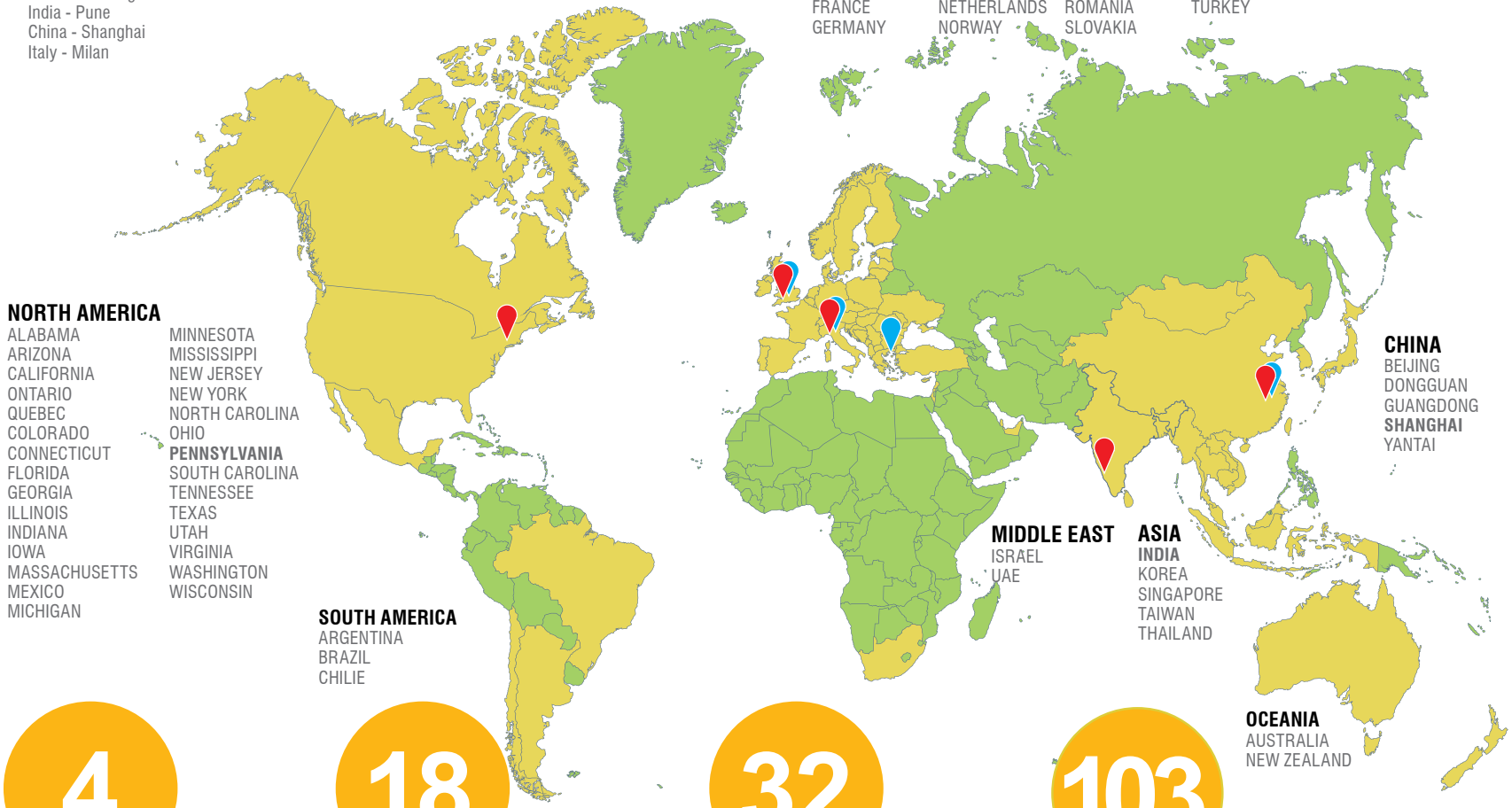
TRIO OFFICES
UK - Tewkesbury HQ
USA - Pittsburgh
India - Pune
China - Shanghai
Italy - Milan

R&D Centres
2 x Control & Software Technology
2 x Servo Drives & motors



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DX3 SERVO PACKAGES

Trio Motion Technology specialises in advanced motion control as a core, providing a range of *Motion Coordinators*, drives and motors, expansion interfaces, I/O modules and HMI's built on *Motion*-ix technologies and designed to enable the control of industrial machines with the minimum of external components.

In support of the Trio concept, we aim to offer the best technical support by telephone, email, our comprehensive website and training courses held throughout the year. Please look at our web site for details.

www.triomotion.com

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