

Product Overview  
Intelligent Servo Drives  
Intelligent Motors

Your  
Next  
Intelligent  
Move



T E C H N O S O F T  
M O T I O N T E C H N O L O G Y



### An Innovative Company

Technosoft is a leading DSP Motion Control technology company, specialized in the design and manufacture of motion control products and custom motion systems. Technosoft's focus on innovative design, using the latest control technology has culminated in the realization of MotionChip™ - a dedicated solution for motion control, embedded today in a broad range of intelligent servo drive products. Technosoft products use modularity both at hardware and software levels. This provides highly flexible and adaptable dedicated solutions that can easily be prototyped to meet specific OEM needs. The automotive, medical, robotics, textile and factory automation industries have effectively used Technosoft's motor control expertise in the fast development of specific products for highly demanding applications.

### Your Benefits

#### Compact and cost effective intelligent drives

- **All in one** : controller and drive in one unit
- **One for all** : same drive for DC, step, brushless or linear motors
- **Distributed intelligence** with :

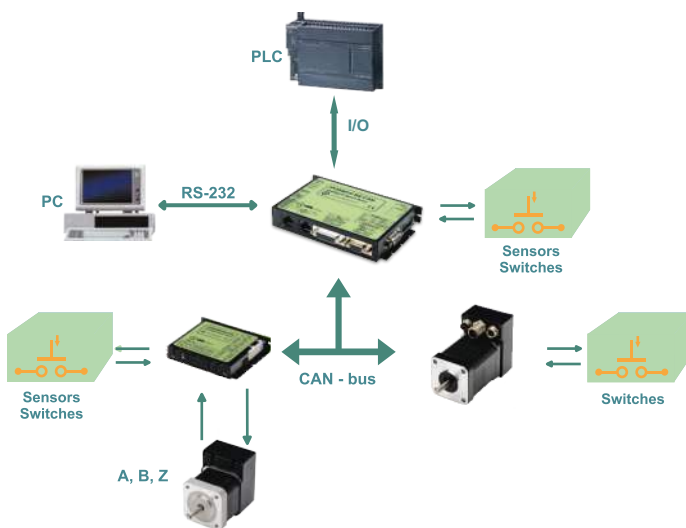


- **Advanced digital motion control** with MotionChip™ DSP technology :
  - PVT, S-curves, electronic camming, 3D motion commands
- **Easy implementation** with various motion libraries for PC / PLC
- **Graphical programming** with EasyMotion Studio

### Intelligent Drives and Motors

Technosoft Intelligent Servo Drives belong to a new family of fully digital servo drives with embedded intelligence, based on the latest DSP controller technology. These state-of-the-art intelligent drives offer features usually found only in high-power servo-amplifiers:

- Software configurability to drive AC or DC brushless, DC brush or step motors
- Multi-mode motion operation: contouring, profiling, gearing, electronic camming
- Stand-alone or multi-axis configuration
- Typical feedback devices: tacho generators, digital or linear Halls, incremental, Sin/Cos, SSI, Biss, Endat encoders
- Distributed control over CAN, CANopen, EtherCAT, Ethernet





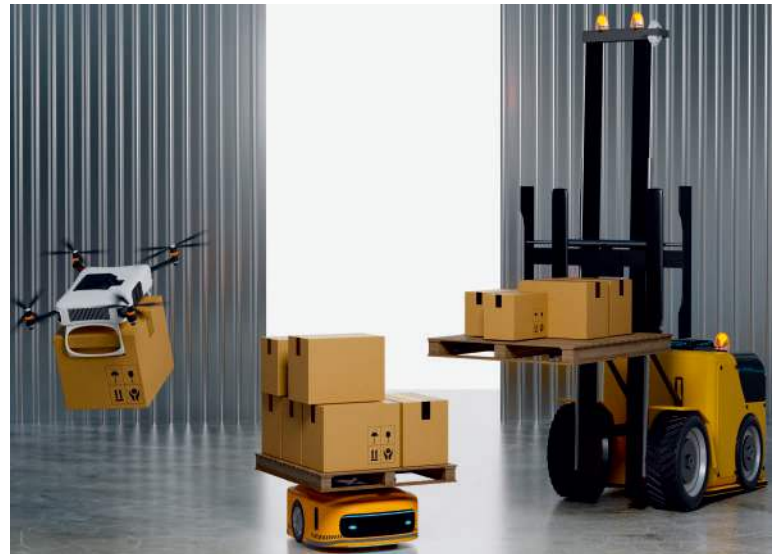
### Medical

- Respiratory devices
- Surgical instruments & robots
- Clinical Diagnosis
- Dosing machines
- Liquid Handling System
- Ophthalmology equipment
- X-Ray equipment
- Biomechanics
- Centrifugal pumps
- Medical pumps



### Robotics & Logistics

- Robots and cobots
- Exoskeletons
- Grippers
- Automated guided vehicles (AGVs)
- Warehouse automation



### Laboratory Automation

- Analysis equipment
- Pipetting
- Automated diagnose station





### Factory Automation

- Pick and place robots
- Cartesian robots
- Welding robots
- Printing equipment
- Laser cutting
- Laser marking
- Dispensing machine
- Soldering machine



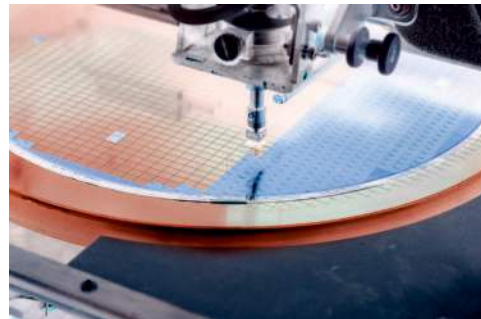
### Packaging

- Bottling machines
- Labeling machines
- Gluing machines
- Package printing



### Semiconductor Equipment

- Flexible automation
- Atomic layer etching
- Trim and form
- Pick and place handler
- Wafer handler



### Instrumentation and Optics

- Digital microscopes
- Laser measuring systems
- Aerial view cameras
- Photometry
- Lens shaping and polishing
- Auto focus & auto zooming





Family		iPOS360x				Micro4804	
Drive		iPOS3602 VX/MX Intelligent Servo Drive 75 W	iPOS3604 VX/MX Intelligent Servo Drive 144 W	iPOS3602 HX/BX Intelligent Servo Drive 75 W	iPOS3604 HX/BX Intelligent Servo Drive 144 W	Micro4804 MZ Intelligent Servo Drive 150 W	Micro4804 CZ Intelligent Servo Drive 150 W
Controlled Motors	DC	✓	✓	✓	✓	✓	✓
	• Step (up to 512 µsteps)	✓	✓	✓	✓	✓	✓
	• Brushless (AC & DC)	✓	✓	✓	✓	✓	✓
	• Linear	✓	✓	✓	✓	✓	✓
Electrical Parameters	Bus Voltage	9-36 V	9-36 V	9-36 V	9-36 V	6-48 V	6-48 V
	Output Current - Nominal	2 A	4 A	2 A	4 A	3 A (RMS)	4 A (RMS)
	Peak Current	3.2 A	10 A	3.2 A	10 A	10 A (RMS)	10 A (RMS)
Communication	RS-232 / USB	✓/-	✓/-	✓/-	✓/-	✓/✓	✓/✓✓
	CAN / CANopen	✓	✓	✓	✓	✓	✓
	EtherCAT	Optional	Optional			✓	✓
	TMLCAN	✓	✓	✓	✓	✓	✓
Motion Control	Control Functions Position, Speed, Torque	✓	✓	✓	✓	✓	✓
	Electronic Gearing	✓	✓	✓	✓	✓	✓
	Electronic Camming	✓	✓	✓	✓	✓	✓
Inputs / Outputs	Analog Inputs	2 (VX) / 1 (MX)	2 (VX) / 1 (MX)	1	1	1	1
	Digital Inputs	5	5	5	5	3 / 6	3 / 6
	Digital Outputs	4 (VX) / 3 (MX)	4 (VX) / 3 (MX)	3	3	3 / 0	3 / 0
Sensors	Quadrature Incremental Encoder	✓	✓	✓	✓	✓	✓
	Digital Hall	✓	✓	✓	✓	✓	✓
	Analog Hall	✓	Optional	Optional	Optional	✓	✓
	Sin / Cos Encoder	✓	✓	✓	✓		
	SSI/BISS Encoder					✓	✓
	Tamagawa					✓	✓
Others	Size (mm)	56 x 29 x 7 (VX) 55 x 26 x 13 (MX)	56 x 29 x 7 (VX) 55 x 26 x 13 (MX)	73 x 45 x 16 (HX) 80 x 55 x 16 (BX)	73 x 45 x 16 (HX) 80 x 55 x 16 (BX)	38 x 25 x 9	40 x 22 x 43
	Weight (g)	10 (VX) / 8 (MX)	10 (VX) / 8 (MX)	48 (HX) / 70 (BX)	48 (HX) / 70 (BX)	8	30
	Ambient Temp. Range (*)	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C

(\*) Extended temperatures available on request



iPOS4808				iPOS481x		iPOS4850	Family	
iPOS4808 VX Intelligent Servo Drive 400 W	iPOS4808 MY Intelligent Servo Drive 400 W	iPOS4808 MY COMBO Intelligent Servo Drive 400 W	iPOS4808 BX Intelligent Servo Drive 400 W	iPOS481x MZ Intelligent Servo Drive 700 W	iPOS481x XZ Intelligent Servo Drive 1 kW	iPOS4850 BX Intelligent Servo Drive 2.5 kW		
✓	✓	✓	✓	✓	✓	✓	DC	Controlled Motors
✓	✓	✓	✓	✓	✓		• Step (up to 512 μsteps)	
✓	✓	✓	✓	✓	✓	✓	• Brushless (AC & DC)	
✓	✓	✓	✓	✓	✓	✓	• Linear	
11-50 V	11-50 V	11-50 V	11-50 V	11-50 V	11-50 V	11-60 V	Bus Voltage	Electrical Parameters
8 A	8 A	8 A	8 A	10/15 A (RMS)	10/15 A (RMS)	45 A (RMS)	Output Current - Nominal	
20 A	20 A	20 A	20 A	28 A (RMS)	28 A (RMS)	64 A (RMS)	Peak Current	
✓ / -	✓ / -	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / -	RS-232 / USB	Communication
✓	✓	✓	✓	✓	✓	✓	CAN / CANopen	
Optional		✓	✓	✓	✓	✓	EtherCAT	
✓	✓	✓	✓	✓	✓	✓	TMLCAN	
✓	✓	✓	✓	✓	✓	✓	Control Functions Position, Speed, Torque	Motion Control
✓	✓	✓	✓	✓	✓	✓	Electronic Gearing	
✓	✓	✓	✓	✓	✓	✓	Electronic Camming	
2	2	2	2	2	2	3	Analog Inputs	Inputs / Outputs
8	6	6	6	6	6	2	Digital Inputs	
5	5	5	5	6	6	2	Digital Outputs	
✓	✓	✓	✓	✓	✓	✓	Quadrature Incremental Encoder	Sensors
✓	✓	✓	✓	✓	✓	✓	Digital Hall	
✓	✓	✓	✓	✓	✓		Analog Hall	
✓	✓	✓	✓	✓	✓		Sin / Cos Encoder	
✓	✓	✓	✓	✓	✓	✓	SSI/BISS Encoder	
				✓	✓	✓	Tamagawa	
56 x 44 x 7	60 x 44 x 12	60 x 44 x 21 (CAN) 64 x 44 x 21 (CAT)	89 x 77 x 17 (CAN) 103 x 71 x 17 (CAT)	64 X 43 X 13	93 X 43 X 30	139 X 93 X 24	Size (mm)	Others
18	20	43 / 45	110 / 120	20	92	240	Weight (g)	
0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	Ambient Temp. Range (*)	

(\*) Extended temperatures available on request



Family		iPOS80x0	iPOS8015		iGVD71	Multi-axes		
Drive		iPOS80x0 BX Intelligent Servo Drive 800 W / 1,6 kW	iPOS8015 BZ Intelligent Servo Drive 1,7 kW	iPOS8015 MZ Intelligent Servo Drive 1,7 kW	iGVD71 BX Intelligent Servo Drive 8 kW	Micro4804 SY Multi-axes Motion system 4 x 150 W	iPOS360x SX Multi-axes Motion system 4 x 144 W	iPOS360x SY Multi-axes Motion system 6 x 144 W
Controlled Motors	• DC	✓	✓	✓	✓	✓	✓	✓
	• Step (up to 512 µsteps)	✓	✓	✓		✓		✓
	• Brushless (AC & DC)	✓	✓	✓	✓	✓	✓	✓
	• Linear	✓	✓	✓	✓	✓	✓	✓
Electrical Parameters	Bus Voltage	11-80 V	11-80 V	11-80 V	11-80 V	6-48 V	12-36 V	12-36 V
	Output Current - Nominal	10 / 20 A	15 A (RMS)	15 A (RMS)	100 A	4x4 A (RMS)	4x4 A / 4 A	6x2 A / 4 A
	Peak Current	20 / 40 A	28 A (RMS)	28 A (RMS)	140 A	10 A (RMS)	4x3.2 A / 10 A	6x3.2 A / 10 A
Communication	RS-232 / USB	✓ / -	✓ / -	✓ / ✓	✓ / ✓	✓ / ✓	✓ / -	✓ / -
	CAN / CANopen	✓		✓	✓	✓	✓	✓
	EtherCAT		✓	✓	✓	✓	Ethernet	✓
	TMLCAN	✓	✓	✓	✓	✓	✓	✓
Motion Control	Control Functions Position, Speed, Torque	✓	✓	✓	✓	✓	✓	✓
	Electronic Gearing	✓	✓	✓	✓	✓	✓	✓
	Electronic Camming	✓	✓	✓	✓	✓	✓	✓
Inputs / Outputs	Analog Inputs	2	2	2	1	4 x 1	4 x 2	6 x 2
	Digital Inputs	4	4	6	5	4 x 3	4 x 5	6 x 5
	Digital Outputs	4	4	6	5	4 x 3	4 x 4	6 x 4
Sensors	Quadrature Incremental Encoder	✓	✓	✓	✓	✓	✓	✓
	Digital Hall	✓	✓	✓	✓	✓	✓	✓
	Analog Hall			✓		✓	✓	✓
	Sin / Cos Encoder	✓	✓	✓			✓	✓
	SSI/BISS Encoder	✓	✓	✓	✓	✓		
	Tamagawa		✓	✓		✓		
Others	Size (mm)	139 x 94 x 25	139 x 94 x 25	64 x 44 x 16	104 x 95 x 47	85 x 69 x 28	100 x 98 x 37	160 x 122 x 22
	Weight (g)	240	240	34	300	120	125	200
	Ambient Temp. Range (*)	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C

(\*) Extended temperatures available on request



iMOT17 Step			iMOT17 Brushless			iMOT23 Step		Gearheads	Family	
iMOT 17xS XM-CAN Intelligent Step Motors 0.3 Nm	iMOT 17xS TM-CAN Intelligent Step Motors 0.3 Nm	iMOT 17xS TM-CAT Intelligent Step Motors 0.3 Nm	iMOT 17xB XM-CAN Intelligent Brushless Motors 0.1-0.3.Nm	iMOT 17xB TM-CAN Intelligent Brushless Motors 0.1-0.3.Nm	iMOT 17xS TM-CAT Intelligent Brushless Motors 0.1-0.3.Nm	iMOT 23xS XM-CAN Intelligent Step Motors 1-1.8 Nm	iMOT 23xS TM-CAN/CAT Intelligent Step Motors 1-1.8 Nm	GP Gearheads up to 90 Nm		
									DC	Controlled Motors
✓	✓	✓				✓	✓		• Step (up to 512 µsteps)	
			AC	AC	AC				• Brushless (AC & DC)	
									• Linear	
12-48V	12-48V	12-48V	12-48V	12-48V	12-48V	12-48V	12-48V		Bus Voltage	Electrical Parameters
0.3 Nm	0.3 Nm	0.3 Nm	0.1-0.3 Nm	0.1-0.3 Nm	0.1-0.3 Nm	1-1.5 Nm	1-1.5 Nm	Rated Torque up to 90 Nm	Output Current - Nominal	
0.5 Nm	0.5 Nm	0.5 Nm	0.3-0.9 Nm	0.3-0.9 Nm	0.3-0.9 Nm	1-1.8 Nm	1-1.8 Nm	Peak Torque up to 150 Nm	Peak Current	
✓	✓	✓	✓	✓	✓	✓	✓		RS-232	Communication
✓	✓		✓	✓		✓	✓		CAN / CANopen	
		✓			✓		✓		EtherCAT	
✓	✓		✓	✓		✓	✓		TMLCAN	
✓	✓	✓	✓	✓	✓	✓	✓		Control Functions Position, Speed, Torque	Motion Control
✓	✓	✓	✓	✓	✓	✓	✓		Electronic Gearing	
✓	✓	✓	✓	✓	✓	✓	✓		Electronic Camming	
1	1	1	1	1	1	1	1		Analog Inputs	Inputs / Outputs
5	4	4	4	4	4	5	4		Digital Inputs	
2	2	2	2	2	2	2	2		Digital Outputs	
Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal		Quadrature Incremental Encoder	Sensors
									Digital Hall	
									Linear Hall	
									Sin / Cos Encoder	
									SSI Encoder	
									BiSS Encoder	
									Resolver	
51+65x43x57	51+65x43x57	51+65x43x57	58+91x43x57	58+98x43x57	58+98x43x57	68+92x58x73	68+92x58x73	40 / 57 / 86 Diameter	Size (mm)	Others
285-600	285-600	285-600	325-700	325-700	325-700	700-1100	700-1100	Up to 4500	Weight (g)	
0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	0 - 40 °C	Ambient Temp. Range (*)	

(\*) Extended temperatures available on request





CANopen



EtherCAT

**iPOS Line****iPOS3602 VX / iPOS3602 MX  
Intelligent Servo Drives****36 V, 2 A  
75 W**

- Suitable for rotary, linear brushless, DC brush and step motors
- 9-36 V power supply (motor and logic)
- 2 A continuous, 3.2 A peak current
- Digital inputs (5), digital outputs (4 VX model / 3 MX model) and analog inputs (2 VX model / 1 MX model)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- RS-232 and CAN (TMLCAN and CANopen protocols)
- Optional EtherCAT extension with CoE protocol
- Mounting: vertical (VX model), horizontal (MX model)
- Size: 56 x 29 x 7 mm (VX model) / 55 x 26 x 13 mm (MX model)

Ordering information:

P028.001.E001 iPOS3602 VX-CAN Servo Drive, 36 V, 2A, CAN  
 P028.001.E101 iPOS3602 MX-CAN Servo Drive, 36 V, 2A, CAN



CANopen



EtherCAT

**iPOS3604 VX / iPOS3604 MX  
Intelligent Servo Drives****36 V, 4 A  
144 W**

- Suitable for rotary, linear brushless, DC brush and step motors
- 5-36 V power supply (motor and logic)
- 4 A continuous, 10 A peak current
- Digital inputs (5), digital outputs (4 VX model / 3 MX model) and analog inputs (2 VX model / 1 MX model)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- RS-232 and CAN (TMLCAN and CANopen protocols)
- Optional EtherCAT extension with CoE protocol
- Mounting: vertical (VX model), horizontal (MX model)
- Size: 56 x 29 x 7 mm (VX model) / 55 x 26 x 13 mm (MX model)

Ordering information:

P028.002.E001 iPOS3604 VX-CAN Servo Drive, 36 V, 4A, CAN  
 P028.002.E101 iPOS3604 MX-CAN Servo Drive, 36 V, 4A, CAN



CANopen

**iPOS3602 BX / iPOS3602HX  
Intelligent Servo Drives****36 V, 2 A  
75 W**

- Suitable for rotary, linear brushless, DC brush and step motors
- 12-36 V single power supply
- Continuous current: 2A
- Peak current: 3.2A
- Digital inputs (5) / outputs (4) and analog inputs (2)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- RS-232 and CAN (TMLCAN and CANopen protocols)
- Size: 80 x 55 x 16 mm (BX model) / 73x45x16 mm (HX model)

Ordering information:

P028.001.E201 iPOS3602 BX-CAN Servo Drive, 36 V, 2A, CAN  
 P028.001.E501 iPOS3602 HX-CAN Servo Drive, 36 V, 2A, CAN


**iPOS3604 BX / iPOS3604HX  
Intelligent Servo Drives**
**36 V, 4 A  
144 W**

- Suitable for rotary, linear brushless, DC brush and step motors
- 12-36 V single power supply
- Continuous current: 2 A
- Peak current: 3.2 A
- Digital inputs (5) / outputs (4) and analog inputs (2)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- RS-232 and CAN (TMLCAN and CANopen protocols)
- Size: 80 x 55 x 16 mm (BX model) / 73x45x16 mm (HX model)

Ordering information:

P028.002.E201 iPOS3604 BX-CAN Servo Drive, 36 V, 4 A, CAN  
P028.002.E501 iPOS3604 HX-CAN Servo Drive, 36 V, 4 A, CAN


**Micro4804  
Intelligent Servo Drives**
**48 V, 4 A RMS  
150 W**

- Suitable for DC brushed, brushless, stepper\*, voice coil or linear motors
- 6-48 V single power supply
- Continuous current: 3-4A (RMS), peak current: 10A peak (RMS)
- Digital inputs (up to 6) / outputs (up to 3) and 1 analog input
- Incremental encoder, Digital Hall sensor, Linear Halls
- Dual loop feedback\* and absolute encoder support\*: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232, USB, TMLCAN and CANopen protocols, EtherCAT
- Size: 38.1 x 25 x 8.4 mm (MZ model) / 38.6 x 40.6 x 22.8 mm (CZ model)/38.1 x 25 x 8.4 mm (LZ model)

Ordering information:

P020.002.E102 Micro 4804 MZ-CAN 48V, 4ARMS, CAN, plug-in  
P020.002.E122 Micro 4804 MZ-CAT, 48V, 4ARMS, EtherCAT, plug-in  
P020.802.E202 Micro 4804 CZ-CAN 48V, 4ARMS, CAN, standalone  
P020.802.E222 Micro 4804 CZ-CAT 48V, 4A, EtherCAT, standalone  
P020.022.E102 Micro 4804 LZ-CAN 48V, 4ARMS, CAN, plug-in  
P020.022.E122 Micro 4804 LZ-CAT, 48V, 4ARMS, EtherCAT, plug-in


**iPOS4808 VX / iPOS4808 MY  
Intelligent Servo Drives**
**48 V, 8 A  
400 W**

- Suitable for DC brushed, brushless, step or linear motors
- 11-50 V motor power supply, 12-36 V logic supply
- 8A continuous, 20A peak current
- Digital inputs (8) / outputs (6 VX model / 6 MY model) and analog inputs (2)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- Optional feedback extension for: SSI and BiSS encoders
- Optional dual and EnDAT 2.2 for MY
- RS-232 and CAN (TMLCAN and CANopen protocols)
- Optional EtherCAT extension with CoE protocol
- Mounting: vertical (VX model), horizontal (MY model)
- Size: 56 x 44 x 7 mm (VX model) / 60 x 44 x 12 (MY model)

Ordering information:

P027.014.E001 iPOS4808 VX-CAN Servo Drive, 48 V, 8 A, CAN  
P027.414.E101 iPOS4808 MY-CAN Servo Drive, 50 V, 8 A, CAN



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EtherCAT

### iPOS4808 MY COMBO Intelligent Servo Drive

48 V, 8 A  
400 W

- Suitable for DC brushed, brushless, step or linear motors
- 4-50 V motor power supply, 12-36 V logic supply
- 8 A continuous, 20 A peak current
- Digital inputs (6) / outputs (5) and analog inputs (2)
- High resolution stepper (512  $\mu$ steps) or step-less control
- Quadrature and Sin/Cos encoders, digital and linear Halls
- Dual Feedback and absolute encoders support (SSI, BiSS and EnDAT 2.2)
- STO (Safe Torque Inputs) capability
- RS-232, TMLCAN and CANopen, CoE protocol for the EtherCAT version
- Size: 60/64 (CAN/CAT) x 44 x 21 mm

Ordering information:

P027.314.E111 iPOS4808 MY-CAN-STO, 48 V, 8 A, CAN, STO  
P027.314.E121 iPOS4808 MY-CAT-STO, 48 V, 8 A, EtherCAT, STO



CANopen



EtherCAT

### iPOS4808 BX Intelligent Servo Drive

48 V, 8 A  
400 W

- Suitable for DC brushed, brushless, step or linear motors
- 11-50 V motor power supply, 12-36 V logic supply
- 8 A continuous, 20 A peak current
- Digital inputs (6) / outputs (5) and analog inputs (2)
- High resolution stepper control up to 512 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or linear Halls
- Dual Feedback and absolute encoder support (SSI, BiSS and EnDAT 2.2)
- STO (Safe Torque Inputs) capability
- RS-232, CAN (TMLCAN and CANopen protocols) and EtherCAT extension with CoE protocol
- Size: 89 x 77 x 17 mm (CAN) / 103 x 71 x 17 mm (CAT)

Ordering information:

P027.014.E201 iPOS4808 BX-CAN Servo Drive, 48 V, 8 A, CAN  
P027.314.E201 iPOS4808 BX-CAN-STO Servo Drive, 48 V, 8 A, CAN, STO  
P027.014.E221 iPOS4808 BX-CAT Servo Drive, 48 V, 8 A, EtherCAT  
P027.314.E221 iPOS4808 BX-CAT-STO Servo Drive, 48 V, 8 A, EtherCAT, STO



CANopen



EtherCAT

### iPOS4810 MZ / iPOS4810 XZ Intelligent Servo Drive

48 V, 10 A RMS  
700 W

- Suitable for DC brushed, brushless, step or linear motors
- Motor supply: 12-50V; Logic SELV/ PELV supply: 9-36V
- Continuous current: 10A (RMS), peak current: 28A peak (RMS)
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe)
- Digital inputs (6) / outputs (6) and analog inputs (2)
- Incremental and Sin / Cos encoders, Digital Hall sensor and Linear Halls
- Dual loop feedback and absolute encoder support: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232, USB
- TMLCAN and CANopen protocols for CAN executions
- EtherCAT with CoE for CAT executions
- Size: 64 x 43.6 x 13.7 mm (MZ-CAN & MZ-CAT model) / 93 x 43.8 x 32.5 mm (XZ-CAT model) 93 x 43.8 x 30.5 mm (XZ-CAN model)

Ordering information:

P022.015.E122 iPOS4810 MZ-CAT, 48V, 10A, EtherCAT, plug-in  
P022.015.E102 iPOS4810 MZ-CAN, 48V, 10A, CAN, plug-in  
P022.815.E122 iPOS4810 XZ-CAT, 48V, 10A, EtherCAT, standalone  
P022.815.E102 iPOS4810 XZ-CAN, 48V, 10A, CAN, standalone



**iPOS4815 MZ / iPOS4815 XZ** **48 V, 15A RMS**  
**Intelligent Servo Drive** **1kW**

- Suitable for DC brushed, brushless, step or linear motors
- Motor supply: 12-50V; Logic SELV/ PELV supply: 9-36V
- Continuous current: 15A RMS, peak current: 28 A PEAK RMS
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe)
- Digital inputs (6) / outputs (6) and analog inputs (2)
- Incremental and Sin / Cos encoders, Digital and linear Hall sensor
- Dual loop feedback and absolute encoder support: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232, USB
  - TMLCAN and CANopen protocols for CAN executions
  - EtherCAT with CoE for CAT executions
- Size: 64 x 43.6 x 13.7 mm(MZ-CAN & MZ-CAT) / 93 x 43.8 x 32.5 mm(XZ-CAT: model) 93 x 43.8 x 30.5 mm(XZ-CAN)

Ordering information:  
 P022.016.E102 iPOS4815 MZ-CAN, 48V, 15A, CAN, plug-in  
 P022.016.E122 iPOS4815 MZ-CAT, 48V, 15A, EtherCAT, plug-in  
 P022.816.E102 iPOS4815 XZ-CAN, 48V, 15A, CAN, standalone  
 P022.816.E122 iPOS4815 XZ-CAT, 48V, 15A, EtherCAT, standalone



**iPOS4850 BX** **48 V, 50A**  
**Intelligent Servo Drive** **2,5 kW**

- Suitable for DC brushed, brushless, 3-phase step or linear motors
- Motor supply: 11-60V; Logic supply: 9-36V
- Continuous current: 45A(RMS), peak current: 64A(RMS) peak
- Digital inputs (2) / outputs (2), analogue inputs (3)
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe) for STO execution
- Incremental encoder (differential), Digital Hall sensor;
- Dual loop feedback and absolute encoder support: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232 serial, TMLCAN and CANopen protocols and EtherCAT extension
- Size: 139 x 93.9 x 24.6 mm

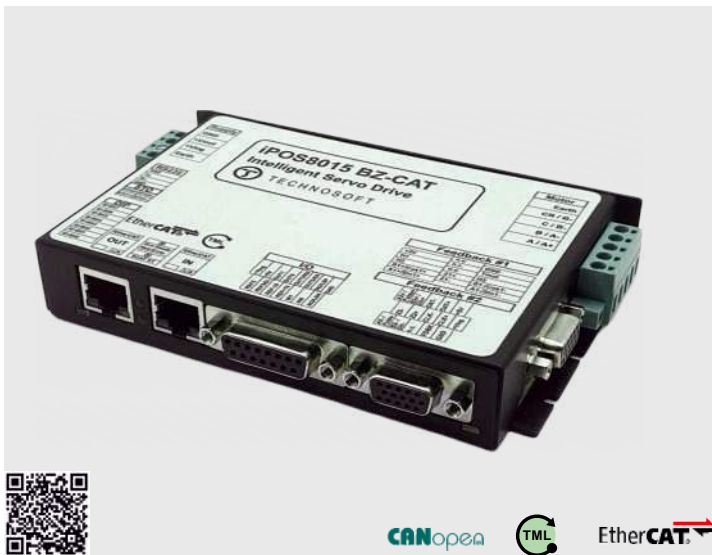
Ordering information:  
 P029.300.E201 iPOS4850 BX-CAN-STO, 48V 50A, cl.frame, Enc, CAN, STO  
 P029.300.E321 iPOS4850 BX- CAT-STO, 48V, 50A, cl. frame, enc., CAT



**iPOS8010 BX / iPOS8020 BX** **80 V, 10 A - 20 A**  
**Intelligent Servo Drive** **800 W - 1,6 kW**

- Suitable for DC brushed, brushless, step or linear motors
- 11-80 V motor power supply, 12-36 V logic supply
- 10 A/20A continuous, 20 A/40A peak current
- Digital inputs (4) / outputs (4) and analog inputs (2)
- High resolution stepper control up to 256 microsteps / step
- Quadrature and Sin / Cos encoders, Hall sensors or , digital
- Dual Feedback and absolute encoder support ( SSI, BiSS and EnDAT 2.2)
- 2 Safe Torque Off (STO) inputs
- RS-232, CAN (TMLCAN and CANopen protocols)
- Size: 139 x 94 x 16 mm

Ordering information:  
 P029.025.E201 iPOS8010 BX-CAN Servo Drive, 80 V, 10A, CAN  
 P029.026.E201 iPOS8020 BX-CAN Servo Drive, 80 V, 20A, CAN



### iPOS8015 BZ Intelligent Servo Drive

80 V, 15 A RMS  
1,7kW

- Suitable for DC brushed, brushless, step or linear motors
- Motor supply: 12-80V; Logic SELV/ PELV supply: 9-36V;
- Continuous current: 15A (RMS), peak current: 28A (RMS)
- Digital inputs (4) / outputs (4), analogue inputs (2), 1 Motor brake digital output
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe)
- Incremental and Sin / Cos encoders, Digital Hall sensors
- Dual loop feedback and absolute encoders support : SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki;
- RS-232, EtherCAT with CoE

#### Ordering information:

P023.026.E221 iPOS8015 BZ-CAT Servo Drive, 15ARMS



### iPOS8015 MZ Intelligent Servo Drive

80 V, 15 A RMS  
1,7 kW

- Suitable for DC brushed, brushless, step or linear motors
- Motor supply: 12-80V; Logic SELV/ PELV supply: 9-36V
- Continuous current: 15A RMS, peak current: 28 A PEAK RMS
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe)
- Digital inputs (6) / outputs (6) and analog inputs (2)
- Incremental and Sin / Cos encoders, Digital and linear Hall sensor
- Dual loop feedback and absolute encoder support: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232, USB
  - TMLCAN and CANopen protocols for CAN executions
  - EtherCAT with CoE for CAT executions
- Size: 64 x 43.6 x 13.7 mm(MZ-CAN & MZ-CAT) / 93 x 43.8 x 32.5 mm(XZ-CAT: model) 93 x 43.8 x 30.5 mm(XZ-CAN)

#### Ordering information:

P022.036.E102 iPOS8015 MZ-CAN, 80V, 15A, CAN, plug-in, STO  
 P022.036.E122 iPOS8015 MZ-CAT, 80V, 15A, EtherCAT, plug-in, STO  
 P022.836.E102 iPOS8015 XZ-CAN, 80V, 15A, CAN, standalone, STO  
 P022.836.E122 iPOS8015 XZ-CAT, 80V, 15A, EtherCAT, standalone, STO



### iGVD71 BX Intelligent Servo Drive

80V, 100A  
8kW

- Suitable for DC brushed, brushless, 3-phase step or linear motors
- Motor supply: 12-80V; Logic SELV/ PELV supply: 9-36V
- Continuous current: 100A, peak current: 140A peak
- Digital inputs (5) / outputs (5), 1 analog input, 1 Motor brake digital output
- STO: 2 safe torque-off inputs, safety integrity level (SIL3/Cat3/PLe)
- Incremental encoder (differential), Digital Hall sensor
- Dual loop feedback and absolute encoders support: SSI, BiSS, EnDAT
- USB, TMLCAN, CANopen (CiA 301, CiA 305 and CiA 402) and EtherCAT
- Size: 104.2 x 95 x 47.1 mm

#### Ordering information:

P025.027.E201 iGVD71 BX CAN STO, 80V, 100A, cl.frame, enc, CAN, STO  
 P025.027.E221 iGVD71 BX CAT, 80V, 100A, cl.frame, enc, EtherCAT, STO



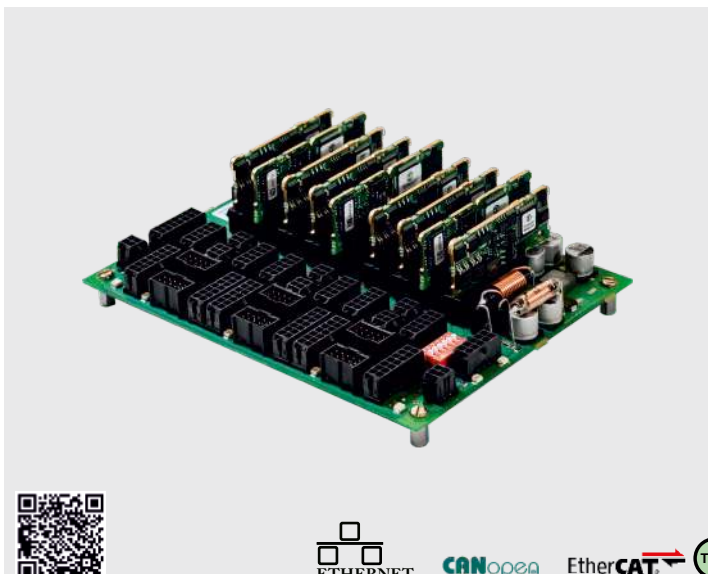
### Micro4804 SY Multi-axis Motion System

7 - 48 V  
4 x 150 W

- Up to 4 axis motion system based on Micro4804 CZ
- For brushless, stepper, rotary and linear motors, voice coils and DC brushed motors
- 6-48V logic supply
- Each axis supports 3A (RMS) continuous, 10A (RMS) peak current
- 4 x Digital inputs (up to 6) / outputs (up to 3) and 1 analog input
- Incremental encoder, Digital Hall sensor, Linear Halls
- Dual loop feedback and absolute encoder support: SSI, BiSS, EnDAT 2.2, Tamagawa, Panasonic, Nikon, Sanyo Denki
- RS-232, USB, Can(TMLCAN and CaNopen protocols, EtherCAT)
- Size: 119x72x22mm

#### Ordering information:

P020.202.E404 Micro 4804 SY4-CAT, 4 Axis System, EtherCAT  
P020.202.E403 Micro 4804 SY3-CAT, 3 Axis System, EtherCAT  
P020.102.E404 Micro 4804 SX4-CAN, 4 Axis System, CAN  
P020.102.E403 Micro 4804 SX3-CAN, 3 Axis System, CAN



### iPOS360x SX / iPOS360x SY Multi-axis Motion System

12-36 V  
4/6 x 144 W

- Suitable for DC brushed, brushless, step or linear motors
- Can be supplied from 1 to 6 axis of any combination of iPOS3602 and iPOS3604
- iPOS360x SX systems with up to 4 axis for RS232, TMLCAN, CANopen or Ethernet
- iPOS360x SY systems with up to 6 axis for RS232, TMLCAN, CANopen or EtherCAT
- 12-36 V power supply (motor and logic separately)
- 2A continuous / 3.3A peak, respectively 4A continuous / 10A peak per axis
- Size: 100 x 98 x 36 mm (4x) / 160 x 122 x 36 mm (6x)

#### Ordering information:

P028.002.E884 iPOS360x MBX-CAN motherboard, 4 axes iPOS VX-CAN  
P038.022.E001 ENET-VX Ethernet plug-in interface  
P028.023.E000 iPOS360x MBX6-CAT motherboard for 6 axes iPOS VX-CAT, G3  
P038.021.E001 ECAT-VX EtherCAT plug-in interface  
P028.024.E006 iPOS360x MBX6-CAN motherboard for 6 axes iPOS VX-CAN, G3

### iMOT Line

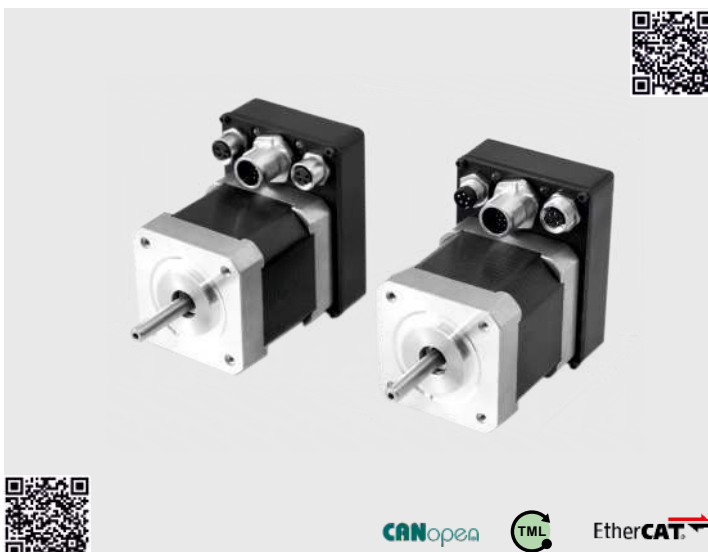
### iMOT17xS Intelligent Step Motors

12-48 V  
0.3 Nm

- Fully programmable intelligent step motors due to TML instruction set
- 12-48 V motor power supply, 12-36 V logic supply
- 3 motor sizes offering from 0.2 to 0.4 Nm
- Minimal power consumption due to true servo closed loop operation
- Integrated position sensor with 4096 counts/rotation
- Programmable digital I/Os and analogue inputs
- RS-232, CANopen, EtherCAT and Ethernet optional

#### Ordering information:

P036.1x1.E120 iMOT17xS XM-CAN Intelligent Step Motor  
P036.1x1.E320 iMOT17xS TM-CAN Intelligent Step Motor  
P036.1x1.E323 iMOT17xS TM-CAT Intelligent Step Motor





### iMOT17xB Intelligent Brushless Servo Motors 12-48 V 0.1-0.3 Nm

- Fully programmable intelligent brushless motors due to TML instruction set
- 12-36 V motor power supply, 12-36 V logic supply
- 3 motor sizes offering from 0.1 to 0.3 Nm @ 3'000 rpm
- Torque up to 18 Nm when provided with the GP gearheads
- Integrated position sensor with 4096 counts/rotation
- Programmable digital I/Os and analogue inputs
- RS-232, CANopen, EtherCAT, TMLCAN, and Ethernet optional

#### Ordering information:

P042.1x1.E120 iMOT17xB XM-CAN Intelligent Brushless Motor  
 P042.1x1.E320 iMOT17xB TM-CAN Intelligent Brushless Motor  
 P042.1x1.E322 iMOT17xB TM-CAT Intelligent Brushless Motor



### iMOT23xS Intelligent Step Motors 12-48 V 1-1.8 Nm

- Fully programmable intelligent step motors due to TML instruction set
- 12-48 V motor power supply, 12-36 V logic supply
- 3 motor sizes offering from 1 to 1.8 Nm
- Minimal power consumption due to true servo closed loop operation
- Integrated position sensor with 4096 counts/rotation
- Programmable digital I/Os and analogue inputs
- RS-232 and CAN (optional EtherCAT and Ethernet communication busses)

#### Ordering information:

P036.222.E120 iMOT232S XM-CAN Intelligent Step Motor, CAN  
 P036.223.E120 iMOT233S XM-CAN Intelligent Step Motor, CAN



### GP High Efficiency Gearheads

- Torque output 5 to 90 Nm
- All steel construction with ratios 5 to 500:1
- Assembled to the iMOT Line of brushless and step motors
- Three families 40 mm, 57 mm and 86 mm diameter
- Intermittent torque from 7.5 to 150 Nm
- Efficiency up to 92%
- Average backlash <30 arc minutes
- Exact ratios simplify calibration in position control applications
- Non standard ratios from 3 to 1000:1

#### Ordering information:

P042.621.E100 GP40M100:1-A-1 Gearbox, Size 17, Ratio 100:1  
 (example, see documentation for complete program)



### Technosoft Motion Language Examples



Through high level software programmability, Technosoft drives and motors offer extended flexibility and versatility resulting in easy-to-use solutions for a variety of motion control applications.

#### Single-Axis Servo, Stand Alone or Host Controlled

The drives can run a locally stored TML program, in stand-alone mode or they can be programmed and controlled from a host controller system, via a communication channel: RS-232, RS-485, EtherCAT or CAN-bus (with CAN / CANopen drive versions). 'Immediate' on-line commands and TML instructions (loading and running of programs, setup of parameters, queries on drive status) can be sent and executed.

#### Events and Interrupts Handling

Programmable events on Technosoft drives, combined with the TML specific interrupts structure, allow you to simultaneously handle different tasks as: protections, time intervals, I/O status or capture, control error or status variable values, besides the main program's TML motion sequences.

#### Multiple-Axis Coordination

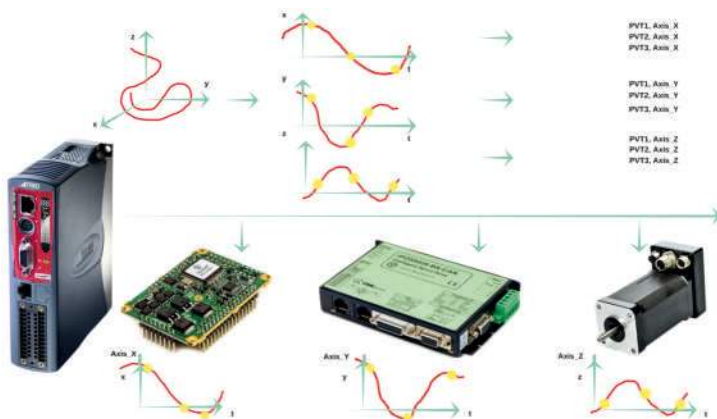
In distributed multiple-axes structures, a host can provide data points to axes in the network (EtherCAT, CAN, CANopen or RS485). Also, locally stored motion profiles can be executed at the host's command, or coordinated via on-board I/Os. Moreover, any axis can request and receive information from other axes in the system, via specific TML commands.

#### Multi-dimensional Paths (linear interpolation & vector mode)

All Technosoft drives, together with the multi-axis controller TMC-3D, can execute 2D, 2<sup>1/2</sup>D or 3D coordinated moves. The trajectories are defined through a series of linear or circular segments. Optionally, for each segment a vector speed and acceleration can be specified. TMC-3D splits each segment into PVT points and sends these points to the slaves. On receiving the PVT points, the slaves rebuild their paths using 3rd order interpolation.

#### Multiple I/O Treatment / Multiple-Axis I/O Handshake

PLC-specific functionalities of Technosoft drives allow you to configure and use the I/O resources of the drive. Also the I/Os available on the drives allow you to create handshake structures between the axes, by appropriate TML programming. Activation of specific axes, completion of programmed tasks on axes, chaining of actions from one axis to another can easily be implemented, further increasing the flexibility of the motion system configuration.

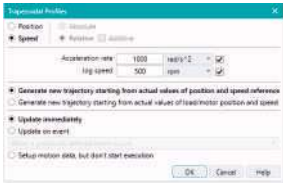






# Technosoft Motion Modes

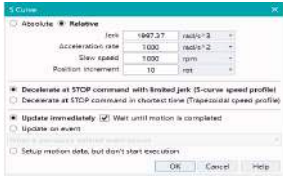
Technosoft drives and motors allow you to program their built-in motion controller in order to set different motion modes and trajectories — internal and external — depending on the way the motion reference is generated.



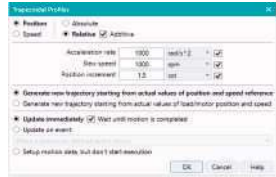
Trapezoidal Speed Profiles



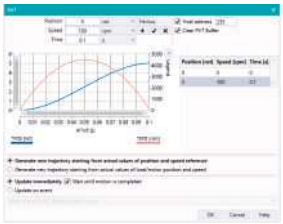
Trapezoidal Position Profiles



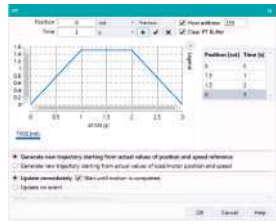
S-curve Profiles



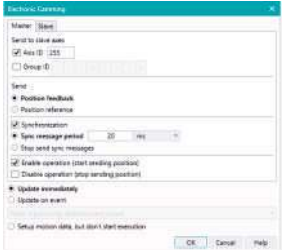
Additive Position Profile



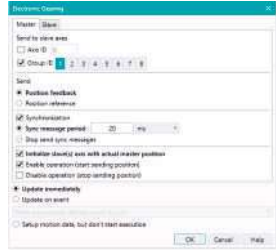
PVT Mode



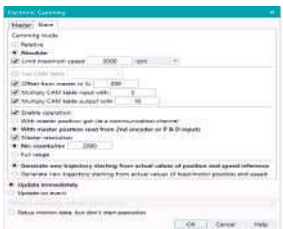
PT Mode



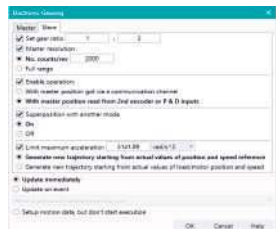
Electronic Gearing - Master



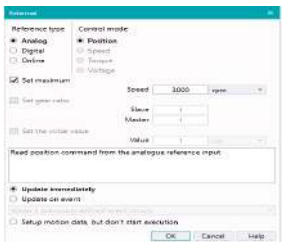
Electronic Gearing - Master



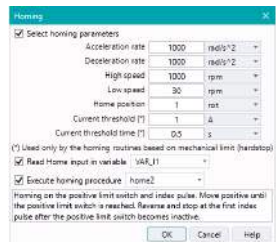
Electronic Gearing - Slave



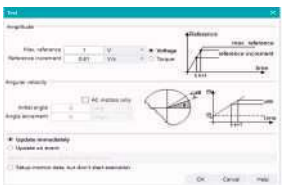
Electronic Gearing - Slave



External Mode



Homing Mode



Test Mode

## Trapezoidal Speed Profiles

Program a speed profile with a trapezoidal shape of the speed, due to a limited acceleration.

## Trapezoidal Position Profiles

Program a position profile due to a limited acceleration. You must specify the position you want to reach, the acceleration / deceleration rate and the travel speed. The built-in reference generator computes the position trajectory, which results in a trapezoidal or triangular speed profile.

## On-the-fly Change of Motion Parameters

Almost any motor mode can be switched to another mode on the fly. This feature is especially useful for position/speed control applications, where the target reference is provided by the internal trajectory generator using position / speed profile modes, position / speed contouring modes, electronic gearing, electronic cam and stop modes.

## S-curve Profiles

Program a position profile with an S-curve shape of the speed. This shape is due to the jerk limitation, which leads to a trapezoidal or triangular profile of the acceleration, and to an S-curve speed profile.

## PT Mode

Programs a positioning path described through a series of points where each point specifies the desired Position and Time (the PT data). Between points, the built-in reference generator performs a linear interpolation.

## PVT Mode

Programs a positioning path described through a series of points. Each point specifies the desired Position, Velocity and Time (the PVT data). Between points, the built-in reference generator performs a 3rd order interpolation.

## Electronic Gearing

Sets the drive as a master or a slave for electronic gearing mode. When set as a master, the drive sends its position via a multi-axis communication channel, like the CANbus. The master sends either the load position or the position reference once, at each slow loop sampling time interval. When set as a slave, the drive follows the master's position with a programmable ratio. The slave can also superpose the electronic gearing movement with another mode.

## Electronic Camming

Similarly to the electronic gearing mode, the drives can be programmed to implement electronic camming. When set as master, the drive sends its position via a multi-axis communication channel. The master sends either the load position or the position reference once at each slow loop sampling time interval. When set as slave, a drive executes a cam profile function of the master position.

## External Mode

Programs the drives to work with an external reference provided by another device. There are 3 types of external references: analogue, digital and online.

## Additive Position Profile

On-the-fly end-point modification during drive's execution of the motion profile. While a motor is executing a position profile, a new target position can be specified by adding a new position increment to the 'old' target position.

## Fast Position Capture

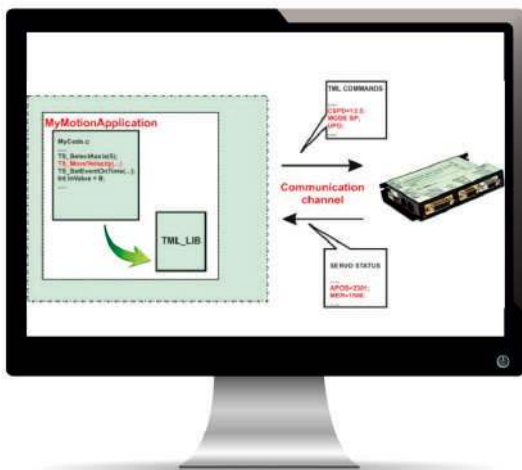
Lets you store motor/load positions based on the transition of a digital input, allowing close correlation of axis positions to external events.

## Homing

Is a sequence of motions, usually executed after power-on, through which the load is positioned into a well-defined point.

## Test Mode

Sets the drives in a special test configuration setup. This configuration is supposed to be used during drive setup.



## EasyMotion Studio

EasyMotion Studio gives you access to the performance of the Technosoft Motion Language (TML). The TML is a high-level set of instructions that can be used to configure and parameterize the MotionChip-based drives, and to execute advanced motion operations. EasyMotion Studio platform simplifies the setup and motion programming, as well as the development and graphical evaluation of your motion sequences.

With the EasyMotion Studio, you can:

- Define the system architecture
- Identify the parameters of the motor, sensor or load
- Tune and adjust digital control loops
- Define motion sequences, import G-code files (for TMC-3D)
- Build the application in TML for single or multi-axis
- Analyze and evaluate the dynamic behavior of your motion system through real time data acquisition

## Motion Libraries for PCs and PLCs

Motion Libraries are collections of functions allowing you to implement motion control applications on a PC computer or PLC, in order to run Technosoft intelligent drives based on the MotionChip™ technology. They enable you to communicate with a drive, set up its parameters, interrogate about its status, send motion commands, define motion events, test input and set output port statuses.

- **PC Motion Libraries running under Windows:** C/C++, C#, Visual Basic, Delphi Pascal and LabVIEW
- **PC Motion Libraries running under Linux:** C/C++
- **PLC Motion Libraries for Siemens, OMRON and B&R:** TML\_LIB\_S7, TML\_LIB\_CJ1 and TML\_LIB\_x20

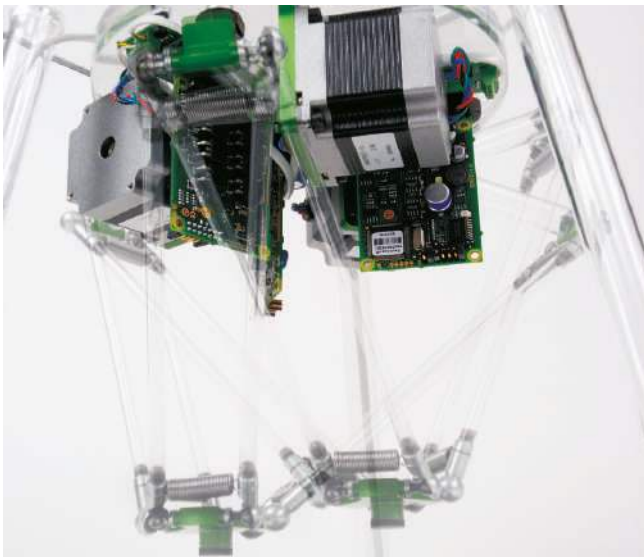
## Starter Kits

For a fast and easy way of learning how to use our intelligent servo drives, Technosoft offers starter kits for each product.

These evaluation kits are ready-to-run packages that include the complete hardware and software you need in order to evaluate and develop your motion applications.

Starter kits include:

- The EasyMotion Studio software
- The intelligent drive of your choice
- A motor (brushless or stepper)
- An I/O board
- A collection of application notes



## Industrial Applications

Technosoft's emphasis on modularity at both hardware and software levels allows us to create highly flexible and adaptable dedicated solutions that can easily and rapidly be prototyped to meet your specific needs. Customers from various industries requiring a wide range of motion control products and systems for specialized applications have effectively utilized Technosoft's expertise for:

- **Packaging:** intelligent solutions for distributed control
- **Medical:** laboratory automation, life support devices
- **Textile:** yarn feeder, high dynamic controls
- **Automotive:** sensorless vector control in fuel cell applications
- **Machine tools:** electronic screw drivers and nut runners
- **Semiconductor industry:** wafer handling and processing



## Custom Solutions

We combine advanced theoretical and modelling know-how in the field of electrical machines and digital motion control implementation on the latest Digital Signal Processor (DSP) technology. Our multidisciplinary engineering team includes experts in the various fields of motion control and mechatronics, such as:

- Intelligent and distributed motion control
- Digital control electronics
- Specific motor control algorithms
- Sensorless vector control
- Digital, analog and power electronic design

Technosoft on-demand solutions are particularly suited for:

- Specific custom integration
- Digital motor control software modules
- Intelligent modular motor controllers



## Quality

### • Our experience

Since over 30 years Technosoft has delivered motion solutions in various fields of the industry. This experience has matured into the continuous improvement of the performance and robustness of our products.

### • Our commitment

Satisfy our customer's expectations by mastering all the technological aspects related to digital motion control solutions.

### • Your satisfaction

Technosoft is certified according to the ISO 9001:2015 standard. This rigorous management system and continuous improvement of the processes reinforce every day our competitiveness and the satisfaction of our customers.



### Documentation and Software

#### Installation Hardware Reference



#### Getting Started



#### Setup and Configuration

#### EasySetUp



#### Motion Programming

#### EasyMotion Studio



#### TML\_LIBs for PC



#### TML\_LIBs for PLC



#### TML programming Manual



#### Application Support Getting started with EasyMotion Studio

#### Application Notes with EasyMotion Studio



#### FAQ



#### Tutorials with EasyMotion Studio



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