

# iPOS4808 BX-CAT INTELLIGENT SERVO DRIVE 8A, 48V<sub>DC</sub>

## FOR BRUSHLESS, BRUSHED, LINEAR OR STEP MOTORS

### DESCRIPTION

The iPOS4808 BX-CAT is a new member of the iPOS family of Technosoft intelligent drives. It is based on a new design concept for closed-frame drives, offering a very compact and cost effective solution for the control of rotary or linear brushless, DC brush, and step motors of powers up to 400 W with EtherCAT communication.

Designed to cover low to medium volume applications, the iPOS4808 BX-CAT embeds motion controller, drive, and PLC functionalities into a single unit. It can be used as an intelligent drive, or as a standard drive accepting CAN application protocol over EtherCAT (CoE).

When used as an intelligent drive - like all other members of the iPOS family - the iPOS4808 BX-CAT is empowered by the extreme flexibility offered by the TML (Technosoft Motion Language).

### ETHERCAT NETWORKING

The iPOS4808 BX-CAT drive supports CAN application protocol over EtherCAT® (CoE) in conformance with CiA 402 device profile. Advanced features are covered, as cyclic synchronous position, up to 35 customizable homing modes (including all CiA 402 standard homing modes), PVT third order interpolation polynomial motion profiles, etc.

Initial drive commissioning is performed via the Technosoft EasySetup or EasyMotion Studio software platforms; checking and updating of setup data can also be done from the EtherCAT master. Motion programming can be done via an EtherCAT® master, or using the drive built-in motion controller executing a TML program. A distributed control approach which combines the above options, like for example a master calling motion functions programmed on the drives in TML is also possible.

### DUAL LOOP

Equipped with 2 feedback connectors, the iPOS4808 BX-CAT provides advanced dual-loop control schemes that minimize the transmission backlash negative effects, and increases system damping and stability.



### FEATURES :

- Motion controller and drive in a single compact unit
- Universal drive solution for brushless, brushed, linear or step (true closed loop) motors
- Advanced motor and motion control capabilities (dual-loop, PVT, S-curve, electronic cam)
- Motion programming via TML (Technosoft Motion Language)
- Communication :
  - RS-232 serial (for setup)
  - EtherCAT : CoE protocol
- Digital and analogue I/Os:
  - 6 digital programmable inputs, 12 - 36 V
  - 5 digital outputs, 5 - 36 V, 0.5 A
  - 2 analogue inputs: 12 bit resolution, 0 - 5 V
- Feedback devices ( dual-loop supported ) :
  - 1<sup>st</sup> Feedback :
    - Incremental quad encoder ( single ended / differential )
    - Pulse & Direction (single ended) interface
    - Analogue sine/cosine encoder ( differential 1Vpp )
    - Digital Hall sensors
  - 2<sup>nd</sup> Feedback :
    - Incremental quad encoder ( differential ), SSI, BISS
- Programmable protections :
  - Over-current, over-temperature, short circuit
  - Over and undervoltage, i2t, control error

### ELECTRICAL SPECIFICATIONS

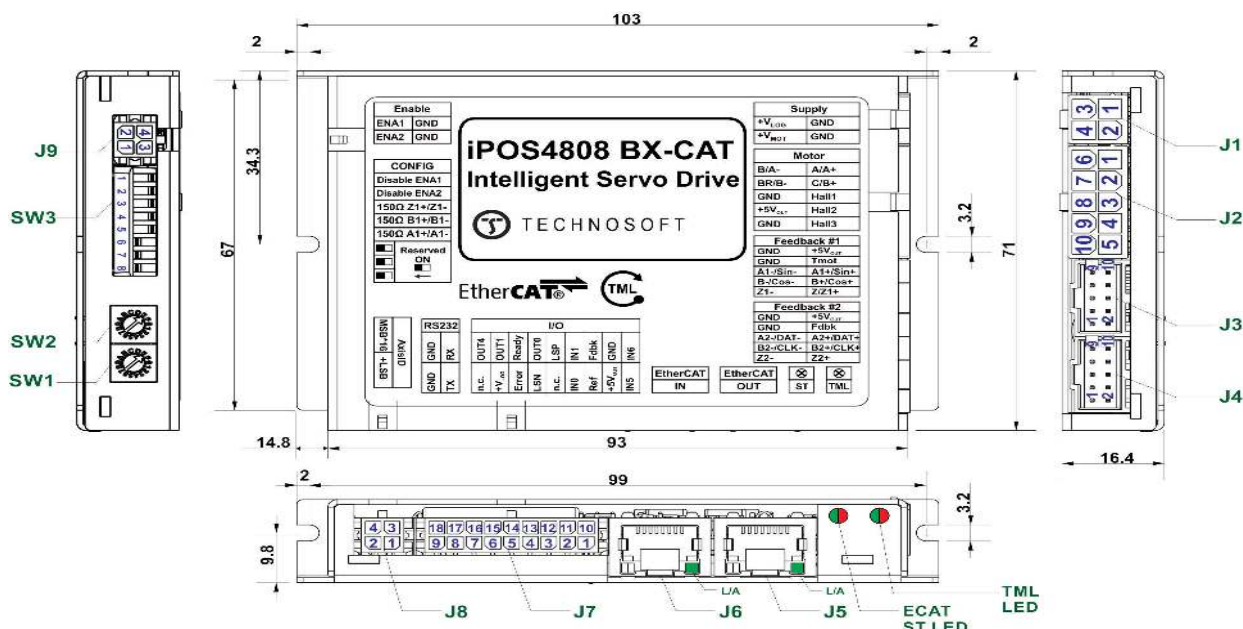
Motor power supply:	12 - 48 V <sub>DC</sub>
Logic supply :	12 - 36 V <sub>DC</sub>
Continuous phase current	8 A
Peak current (2.4 sec. max.)	20 A
PWM switching frequency	20 - 100 kHz
Operating ambient temperature	0 °C - 40 °C

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# TECHNICAL AND ORDERING INFORMATION



<b>J1 Supply</b> 1 GND 2 GND 3 +VLOG 4 +VMOT	<b>J2 Motor + Halls</b> 1 Motor phase A/A+ 2 Motor phase C/B+ 3 Hall 1 4 Hall 2 5 Hall 3 6 Motor phase B/A- 7 Brake/phase B- 8 GND 9 +5VOUT 10 GND	<b>J3 Feedback#1</b> 1 Z1- 2 Z1+ 3 B1-/Cos- 4 B1+/Cos+/Dir 5 A1-/Sin- 6 A1+/Sin+/Pulse 7 GND 8 TempMot 9 GND 10 +5Vout	<b>J4 Feedback#2</b> 1 Z2- 2 Z2+ 3 B2-/Dir-/CLK-/MA- 4 B2+/Dir+/CLK/MA+ 5 A2-/Pulse-/Data-/SL- 6 A2+/Pulse+/Data+/SL+ 7 GND 8 FDBK 9 GND 10 +5Vout	<b>J5 EtherCAT OUT</b> <b>J6 EtherCAT IN</b> <b>J7 I/O &amp; Logic Supply</b> 1 In5 DI* 2 +5 VOUT 3 Reference AI* 4 In0 DI* 5 n.c. 6 In3/Limit- DI* 7 Out2/Error DO* 8 +VLOG 9 n.c. 10 In6 DI*	<b>J8 RS232</b> 1 232TX 2 GND 3 232RX 4 GND  <b>J9 Enable</b> 1 ENA2 2 ENA1 3 GND 4 GND
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**LEDs**  
Green - Ready  
Red - Error  
Bi-color - EtherCAT Status

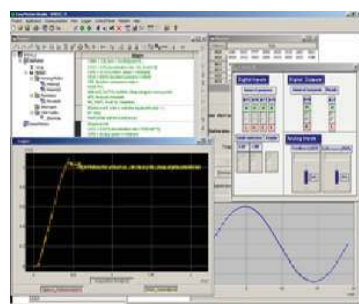
\* AI - analog input ; DI - digital input ; DO - digital output

## EASYMOTION STUDIO

The high level graphical development environment EasyMotion Studio supports the configuration, parameterization and programming of the drive, through:

- Motion system set-up wizard
- Tuning assistance with capture functions
- Definition, programming and testing of motion sequences

The configuration, tuning and programming of the iPOS4808 BX-CAT drive is easy with Technosoft's powerful graphical platform, EasyMotion Studio.



**Application notes** with TML program examples at :  
[www.technosoftmotion.com](http://www.technosoftmotion.com)

## ORDERING INFORMATION

**P027.214.E221** iPOS4808 BX-CAT Drive, 48 V, 8 A, closed frame, EtherCAT

**P034.001.E002** EasyMotion Studio Software

**P027.040.C218** Complete cable set 100 cm for iPOS4808 BX-CAT, enc.single ended

**P027.040.C219** Complete cable set 100 cm for iPOS4808 BX-CAT, enc.differential

**P027.040.C289** Housing & crimp pins set for iPOS4808 BX-CAT

### FLEXIBILITY :

Control schemes supported by the iPOS4808 BX-CAT Drive

Motor types	Torque Control	Speed Control	Position Control*
Brushless	✓	✓	✓
Brushed	✓	✓	✓
Step	✓	✓	✓

\* Dual-loop control supported

## CONNECTORS TYPE AND MATING CONNECTORS :

Connector	Housing	Crimp Pin
J1	Molex 39-03-9042	Molex 45750-1111
J2	Molex 39-03-9102	
J3, J4	Molex 90142-0010	Molex 90119-0109
J7	Molex 43025-1800	Molex 43030-0007
J8, J9	Molex 43025-0400	
J5, J6,	RJ45 8P8C plug	

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