# iPOS4850 BX-CAN-STO Intelligent Servo Drive 50A, 48VDC

## For Brushless, Brushed or Linear Motors

## Description

The iPOS4850 intelligent drives are based on a new design concept that has result in a cost-effective, compact and modular solution suitable for position, speed or torque control of any DC, brushless or linear motor of powers up to 2.5 kW with RS232 and CAN communication.

Designed to cover the low voltage and high current applications, the iPOS4850 intelligent drives embed the motion controller, drive and PLC functionalities into a single unit. It can be used as an intelligent drive, or as a standard drive accepting TMLCAN or CANopen commands.

## CANopen Networking

The iPOS4850 BX-CAN intelligent drives support CANopen application protocol in conformance with CiA 402 device profile. Advanced features are covered, as cyclic synchronous position, 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 Easy SetUp or EasyMotion Studio software platforms; checking and updating of setup data can also be done from the CANopen master.

## Dual Loop

Equipped with 2 feedback inputs, the iPOS4850 BX-CAN intelligent drive provides advanced dual-loop control schemes that minimize the transmission backlash negative effects and increases the system damping and stability.

## EasyMotion Studio

The configuration, tuning and programming of the iPOS4850 BX-CAN drive is easy with Technosoft's powerful graphical platform, 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

## Features :

- Motion controller and drive in a single compact unit
- Universal drive solution for brushless, brushed and linear motors
- Advanced motion control capabilities (PVT, S-curve, Electronic Gearing / Camming etc.)
- Motion programming via TML (Technosoft Motion Language) or motion libraries for Visual C / VB / LabVIEW / Linux and PLC
- Standalone operation with stored motion sequences
- Communication:
  - RS-232 serial
  - CAN-Bus with TMLCAN or CANopen (CiA301v4.2 and CiA402v3.0) protocols selectable by h/w switch
- Digital and analogue I/Os:
  - 2 digital PNP inputs, 7-36 V: 2 limit switches
  - 3 digital outputs, 5-36 V, NPN open-collector: Ready, Error (0.5 A) and OUT0 (2 A)
  - 3 analogue inputs, 12-bit, 0-5V: (1) Feedback; (2) Reference; (3) Motor Temperature •
- Solenoid driver for motor brake, 2A
- STO inputs with safety integrity level SIL3/Cat3/Ple
- Feedback devices (dual loop supported):

1st Feedback :

- incremental quadrature encoder (differential)
- digital Hall sensors (differential)

2nd Feedback :

- incremental quadrature encoder or pulse & direction (differential),
- SSI or BISS-C absolute encoder interface
- 32 h/w addresses selectable by h/w DIN switch
- Programmable protections to over-current, short-circuit, over-voltage, under-voltage, I2t, control error
- Size: 139 x 93.9 x 24.6 mm (~5.47 x 3.7 x 0.97 inch)

## Electrical Specifications

| | |
|---|---|
| Motor power supply: | 12 - 60 VDC |
| Logic /STO supply : | 12 - 36 VDC/18-36 VDC |
| Continuous phase current | 50 A |
| Peak current | 90 A |
| PWM switching frequency | 20 - 100 kHz |
| Operating ambient temperature | 0 °C - 40 °C |

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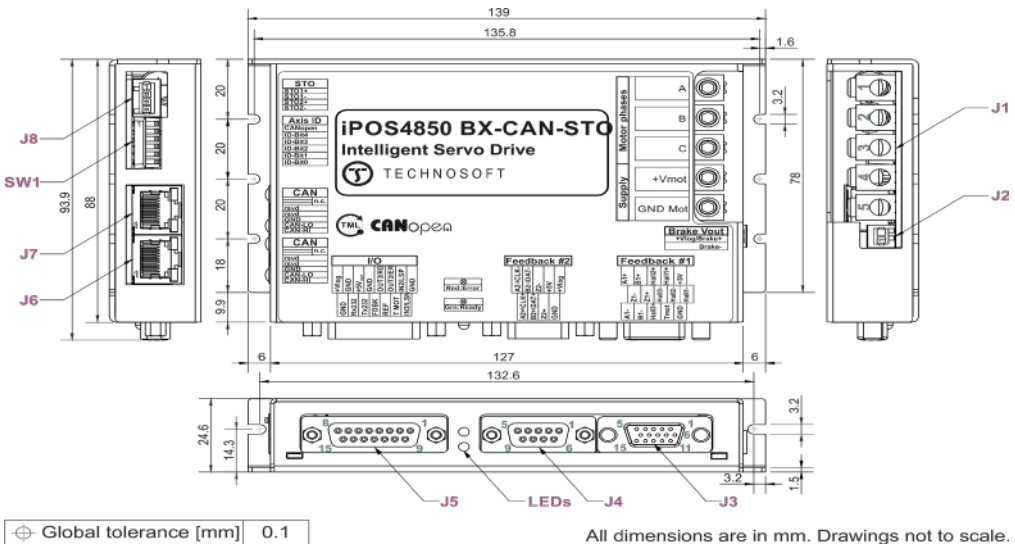
# Technical And Ordering Information




J1 - Motor
1 A/A+
2 B/A-
3 C
4 +VMOT
5 GND

J2 – Brake Input
1 BRAKE-
2 BRAKE+

J3 - Feedback#1
1+5VOUT
2 Hall 1+
3 Hall 2+
4 B1+
5 A1+
6 Hall1-
7 Hall2-
8 Hall3-
9 Z1+
10 Z1-
11 GND
12 Temp Mot
13 Hall 3
14 B1-
15 A1-

J4 Feedback#2
1 +VLOG
2 +5VOUT
3 Z2-
4 B2-/Dir-/Data-/SL-
5 A2-/Pulse-/CLK/MA
6 GND
7 Z2+
8 B2+/Pulse+/Data+/SL+
9 A2+/Pulse-/CLK-/MA

J5 I/O
1 GND
2 IN2/LSP
3 OUT2/Error
4 OUT3/Ready
5 GND
6 +5VOUT
7 GND
8 +VLOG
9 IN3/LSN
10 Temp Mot
11 REF
12 FDBK
13 232TX
14 232RX
15 GND

J6 & J7 - CAN
1 Can-Hi
2 Can-Lo
3 GND
4,5 -
6...8 n.c.

J8- Reserved
1 STO1+
2 STO1-
3 STO2+
4 STO2-

## Motion Control Libraries

The TML_LIB Motion Control Libraries can be used to implement a motion control application on a PC from Visual C / C++, C#, Visual Basic, Delphi or LabVIEW under Windows or Linux operating systems.

If a PLC is used as host, implementations of the TML_LIB according with IEC-61131standard are available for Siemens, B&R and Omron PLCs.

Application notes with TML program examples at :
www.technosoftmotion.com

## Ordering Information :

| | |
|---|---|
| P029.300.E201 | iPOS4850 BX-CAN-STO Intelligent Drive, 48V, 50A, closed frame, encoder, CAN, STO |
| P034.001.E002 | EasyMotion Studio Software |
| P040.001.Exxx | TML_LIB Motion Library** |
| P029.040.C069 | Connectors set for iPOS4850 BX-CAN-STO |

**ask for existing libraries types

## Flexibility :

Control schemes supported by the iPOS4850 BX-CAN-STO Intelligent Drive

| Motor types | Torque Control | Speed Control | Position Control* |
|---|---|---|---|
| Brushless | √ | √ | √ |
| Brushed | √ | √ | √ |
| Linear | √ | √ | √ |

## Connectors Type and Mating Connectors :

| | |
|---|---|
| J2 | Wago 733-102 |
| J3 | Generic 15-pin High Density D-Sub male connector |
| J4 | Generic 9-pin D-Sub male connector |
| J5 | Generic 15-pin D-Sub male connector |
| J6 & J7 | Standard 8P8C modular jack (RJ-45) male connectors |
| J8 | Wago 733-104 |

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