ISCM4805 / 8005 Intelligent Servo Control Modules 200W

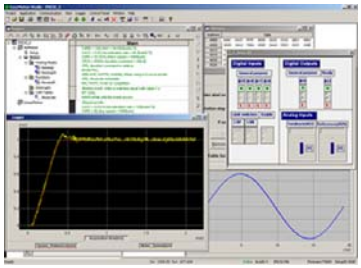
Digital Motor Control for Brushless, DC Brush, Linear and Step Motors

The ISCM4805 and ISCM8005 are new Technosoft high-performance intelligent servo modules, combining motion controller, drive and PLC functionality in a single compact unit.
The ISCM modules are flexible, cost effective and compact solutions, particularly adapted for distributed and co-ordinated control of brushless, DC, linear or step motors of powers up to 240W, with voltages up to 80V.
Typical applications include distributed motor control with possibilities of gearing and electronic CAM functions in a CAN network operation.
Targeted for medium to high volume applications, the ISCM hardware structure is based on a cost optimised design integrating all the basic motor control functions on one double-sided credit card format. A series of I/O signals, both digital and analogue, are available for easy interfacing with the application.
A complete set of high-level Technosoft Motion Language (TML) instructions permit to define and start complex motion sequences from your host, PC, or to execute pre-stored motion sequences selected from I/O lines, in a stand-alone mode.
The Embedded Intelligence of the ISCM facilitates the configuration and programming of the module through a high level graphical interface as the EasyMotion Studio.

Your Next Intelligent Move
"Motion Control at the Click of a Mouse"

The configuration, tuning and programming of the ISCM intelligent servo modules is easy using the powerful graphical Technosoft EasyMotion Studio.

System **configuration** and **parameterization** are performed by the selection and test of system structure, motor and sensors type and control mode.



Features

- **Fully digital servo drive with embedded intelligence and PLC functionality**
- **Suitable for brushless DC, brushless AC (vector control) DC brush, linear and two-phase step motors**
- **Compact open frame design (70x50 mm) credit card format; DIN-rail version also available**
- **Various control modes as:**
  - **Torque, speed or position control**
  - **Electronic gearing, contouring, profiling**
  - **Step motor emulation (step and direction input)**
  - **External variables control capabilities (pressure, flow, temperature etc.)**
- **Powerful Technosoft Motion Language (TML) instruction set for definition and execution of motion sequences in:**
  - **Single or multi axis control (master or slave mode)**
  - **Standalone operation with Stored Motion sequences**
- **RS-232 serial communication**
- **CAN-Bus 2.0B up to 1 Mbit/s / CANopen**
- **Programmable digital input / outputs and analog inputs**
  - **5 to 8 programmable inputs / outputs**
  - **Differential quadrature encoder and digital Halls interface**
  - **Linear Hall sensors interface**
  - **2 analog inputs, 0...5V; +/- 10V range**
- **Motor power supply 48V - ISCM4805, or 80V - ISCM8005**
- **High current capability (5A continuous, 16A peak current)**
- **Protection for over current, short circuit, earth fault, over- and under-voltage, I^2t, control error**
- **2.54 mm pitch edge connector**
- **Custom hardware and firmware options available (PMCM series)**

Typical Applications

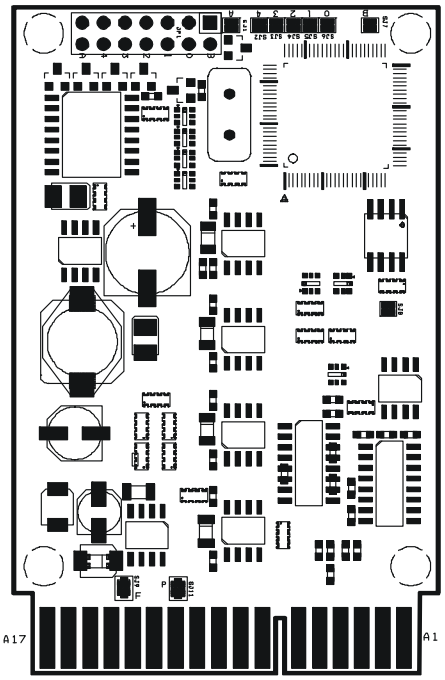
- **Systems with distributed motor control intelligence**
- **Packaging equipment**
- **Printing**
- **Textile**
- **Medical**
- **Automotive**
- **Pick and place**
- **Factory automation**

Application notes with ready to run Motion Language program examples are available at www.technosoftmotion.com

TECHNOSOFT
MOTION TECHNOLOGY

DIMENSIONS, SPECIFICATION, ORDERING INFORMATION
ISCM4805 / ISCM8005

ISCM4805 / ISCM8005 v1.3

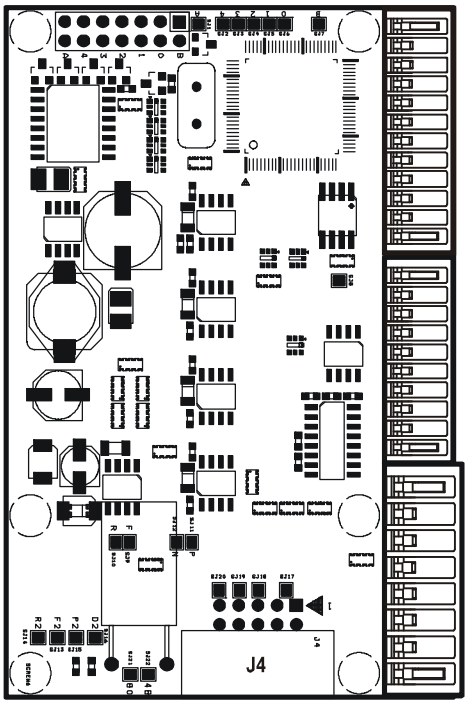


A1	$+V_{MOT}$
A2	A / A+
A3	B / A-
A4	C / B+
A5	BRAKE / B-
A6	+5V
A7	ENCA+
A8	ENCB+
A9	ENCZ+ / CAPI
A10	HALL_1
A11	PULSE/ IO
A12	LSP
A13	ENABLE / AUTO
A14	FEEDBACK / IO
A15	GND
A16	CAN_H
A17	TX232

B1	$+V_{MOT}$
B2	A / A+
B3	B / A-
B4	C / B+
B5	BRAKE / B-
B6	$+V_{LOG}$
B7	ENCA_/LH1
B8	ENCB_/LH2
B9	ENCZ_/LH3
B10	HALL_2
B11	HALL_3
B12	LSN
B13	RESET
B14	REF / DIR / IO
B15	GND
B16	CAN_L
B17	RX232

J4-10	ENCZ+
J4-9	ENCZ-/LH3
J4-8	ENCB+
J4-7	ENCB-/LH2
J4-6	ENCA+
J4-5	ENCA-/LH1
J4-4	+5V
J4-3	SJ17
J4-2	+5V
J4-1	GND

ISCM4805 / ISCM8005 - DIN v1.3



J3-12	LSN
J3-11	LSP
J3-10	+5V
J3-9	ENCZ+
J3-8	ENCB+
J3-7	ENCA+
J3-6	HALL_3
J3-5	HALL_2
J3-4	HALL_1
J3-3	GND
J3-2	CAN_L
J3-1	CAN_H

J2-10	Rx232
J2-9	Tx232
J2-8	+5V
J2-7	FEEDBACK / Out
J2-6	REF / Out
J2-5	GND
J2-4	DIR / OUT
J2-3	PULSE / OUT
J2-2	RESET
J2-1	ENABLE

J1-8	GND
J1-7	+24V
J1-6	+Vmot
J1-5	GND
J1-4	BRAKE / B-
J1-3	C / B+
J1-2	B / A-
J1-1	A / A+

Drawings not to scale

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
- Definition, programming and testing of motion sequences

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 observing the IEC 61131 standard are available for Siemens and Omron PLCs.

ISCM STARTER KIT

Complete evaluation packages for the ISCM drives, containing the servodrive, motor, I/O board, EasyMotion Studio software that are supported by a collection of application notes and documentation.

ISCM4805 / ISCM8005 INTELLIGENT SERVO MODULES

Electrical Specifications	ISCM4805	ISCM8005
DC supply voltage: logic	24V	
motor	12-48V	12-80V
Maximum continuous current	5A	
Peak current (100 ms. max.)	16A	
Minimal load inductance	200 microHenry*	330 microHenry*
Nominal switching frequency	20kHz	
Operating ambient temperature	0°C-40°C	

*at 48V (ISCM4805) / 80V (ISCM8005) and 20kHz switching frequency

Ordering Information

P047.001.E201	**ISCM4805 Servo Module, 48V, 5A, CAN**
P047.001.E211	**ISCM4805 Servo Module, 48V, 5A, CANopen**
P047.001.E301	**ISCM8005 Servo Module, 80V, 5A, CAN**
P047.001.E311	**ISCM8005 Servo Module, 80V, 5A, CANopen**
P052.001.E201	**ISCM4805 Servo Module, 48V, 5A, DINrail, CAN**
P052.001.E211	**ISCM4805 Servo Module, 48V, 5A, DINrail, CANopen**
P052.001.E301	**ISCM8005 Servo Module, 80V, 5A, DINrail, CAN**
P052.001.E311	**ISCM8005 Servo Module, 80V, 5A, DINrail, CANopen**
P047.001.E084	**ISCM4805 Starter Kit for Brushless Motor**
P047.001.E085	**ISCM4805 Starter Kit for Stepper Motor**
P047.001.E184	**ISCM4805 I/O board**
P034.001.E002	**EasyMotion Studio software**
P040.001.Exxx	**TML_LIB Motion Libraries****

**ask for existing libraries types

FLEXIBILITY

Standard control schemes supported by the ISCM Drives

Motor Types	Torque control	Speed control	Position control
Brushless DC / AC	✓	✓	✓
DC Brush	✓	✓	✓
Linear	✓	✓	✓
Step	✓	✓	✓

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Your Next Intelligent Move

TECHNOSOFT
MOTION TECHNOLOGY

ISM4803 Intelligent Servo Module 150W

Digital Motor Control for Brushless, DC Brush, Linear and Step Motors

The ISM4803 is a new Technosoft high-performance intelligent servo module, combining motion controller, drive and PLC functionality in a single compact unit.

The ISM module is a flexible, cost effective and compact solution, particularly adapted for distributed and co-ordinated control of brushless, DC, linear or step motors of powers up to 150W, with voltages up to 48V.

Typical applications include distributed motor control with possibilities of gearing and electronic CAM functions in a CAN network operation.

Targeted for medium to high volume applications, the ISM hardware structure is based on a cost optimised design integrating all the basic motor control functions on one double-sided card format.

A series of I/O signals, both digital and analogue, are available for easy interfacing with the application.

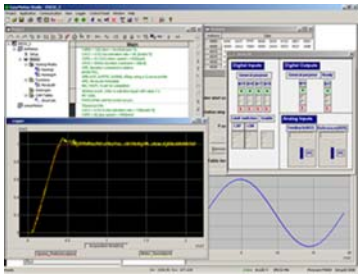
A complete set of high-level Technosoft Motion Language (TML) instructions permit to define and start complex motion sequences from your host, PC, or to execute pre-stored motion sequences selected from I/O lines, in a stand-alone mode.

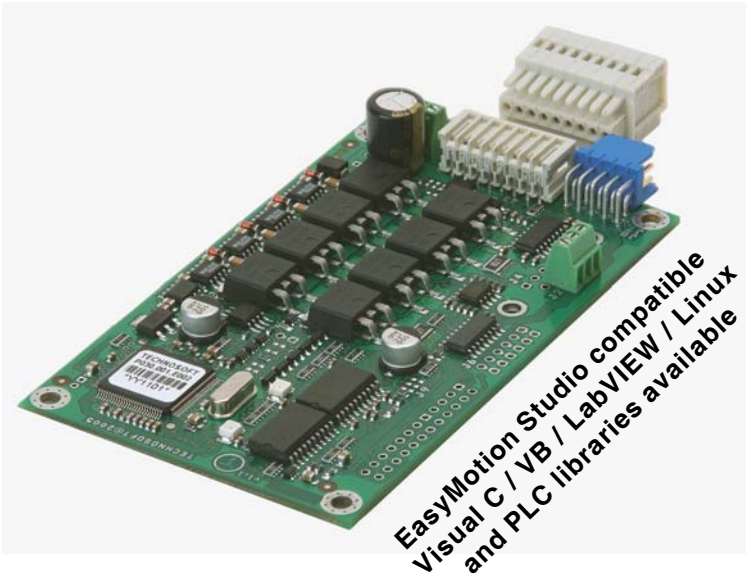
The embedded Intelligence of the ISM facilitates the configuration and programming of the module through a high level graphical interface as the EasyMotion Studio.

Your Next Intelligent Move
"Motion Control at the Click of a Mouse"

The configuration, tuning and programming of the ISM intelligent servo module is easy using the powerful graphical Technosoft EasyMotion Studio.

System **configuration** and **parameterization** are performed by the selection and test of system structure, motor and sensors type and control mode.





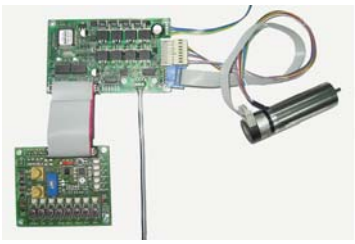
Features

- **Fully digital servo drive with embedded intelligence and PLC functionality**
- **Suitable for brushless DC, brushless AC (vector control) DC brush, linear and two, three-phase step motors**
- **Compact open frame design (104x64 mm) card format**
- **Various control modes as:**
  - **Torque, speed or position control**
  - **Electronic gearing, contouring (PVT, PT), profiling (trapezoidal, S-curve)**
  - **Step motor emulation (step and direction input)**
- **Powerful Technosoft Motion Language (TML) instruction set for definition and execution of motion sequences in:**
  - **Single or multi axis control (master or slave mode)**
  - **Standalone operation with Stored Motion sequences**
- **RS-232 serial communication**
- **Optional CAN-Bus 2.0B up to 1 Mbit/s / CANopen**
- **Programmable digital input / outputs and analog inputs**
  - **4 general purpose inputs / 4 general purpose outputs**
  - **Differential quadrature encoder and digital Halls interface**
  - **Linear Hall sensors interface**
  - **2 analog inputs, +/- 10V range**
  - **6 dedicated digital inputs/ 2 dedicated digital outputs**
- **Motor power supply 48V; logic power supply 5V**
- **High current capability (3A continuous , 6A peak current)**
- **Protection for over current, short circuit, over- and under-voltage, I^2t, control error**
- **Custom hardware and firmware options available (GP series)**

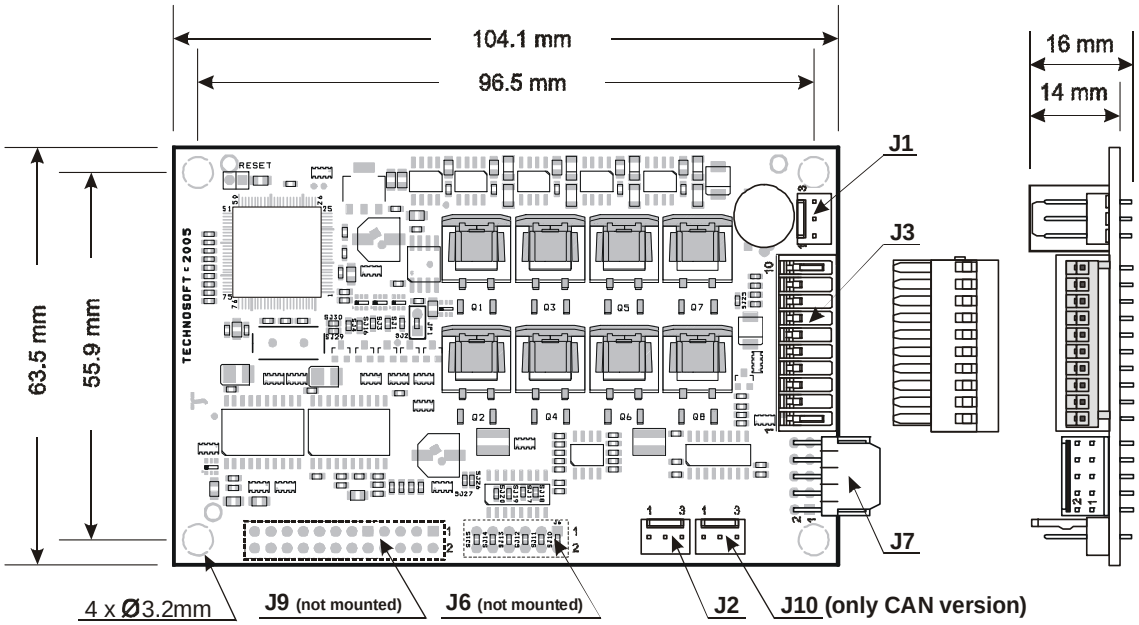
Typical Applications

- **Systems with distributed motor control intelligence**
- **Packaging equipment**
- **Printing**
- **Textile**
- **Medical**
- **Labeling**
- **Automotive**
- **Pick and place**
- **Factory automation**

Application notes with ready to run Motion Language program examples are available at www.technosoftmotion.com



DIMENSIONS, SPECIFICATION, ORDERING INFORMATION
ISM4803



Drawings not to scale

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
- Definition, programming and testing of motion sequences

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 observing the IEC 61131 standard are available for Siemens and Omron PLCs.

ISM4803 STARTER KIT

Complete evaluation packages for the ISM drive, containing the servodrive, motor, I/O board, EasyMotion Studio software that are supported by a collection of application notes and documentation.

ISM4803 INTELLIGENT SERVO MODULE

Electrical Specifications	ISM4803
DC supply voltage: logic	5V
motor	12 -48V
Maximum continuous current	3A
Peak current (100 ms. max.)	6A
Minimal load inductance	200 microHenry*
Nominal switching frequency	20kHz
Operating ambient temperature	0°C-40°C

*at 48V and 20kHz switching frequency

Ordering Information

P030.001.E001	**ISM4803 48V, 3A, RS232**
P030.001.E002	**ISM4803 48V, 3A, RS232, CAN**
P030.001.E003	**ISM4803 48V, 3A, RS232 with J6 / J9 connector**
P030.001.E004	**ISM4803 48V, 3A, CAN with J6 / J9 connector**
P030.001.E014	**ISM4803 48V, 3A, CANopen with J6 / J9 connector**
P030.001.E084	**ISM4803 Starter Kit for Brushless Motor**
P030.001.E085	**ISM4803 Starter Kit for Stepper Motor**
P034.001.E002	**EasyMotion Studio software**
P040.001.Exxx	**TML_LIB Motion Control Library****

**ask for existing libraries types

FLEXIBILITY: Motor - sensor configurations

Standard control schemes supported by the ISM Drive

Sensor \ Motor	PMSM	BLDC	DC BRUSH	STEP (2-ph.)	STEP (3-ph.)
Encoder	✓		✓	✓	
Encoder + Hall	✓	✓			
Tacho			✓		
Linear Halls	✓				
Open-loop (no sensor)				✓	✓

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www.technosoftmotion.com

Your **Next** Intelligent **Move**

TECHNOSOFT
MOTION TECHNOLOGY

ISD720/860 Intelligent Servo Drives 720/860W

Digital Motor Control for Brushless, DC Brush and Linear Motors

The ISD720 and ISD860 are new members of the fully digital servo drive family from Technosoft with embedded intelligence based on the latest DSP controller technology.

These high-performance intelligent servo drives, combine motion controller, drive and PLC functionality in a single compact unit. The drives are programmable with the high level Technosoft motion language (TML), used for the definition and the execution of speed or position commands from a master or of pre-stored motion sequences triggered by I/O signals.

Distributed motion control functionality is ensured by the embedded CAN controller or by the RS-232 interface.

Compatible with Technosoft EasyMotion Studio for quick configuration, tuning and motion programming, the ISD drives offer a flexible and easy to implement solution for a wide range of applications.

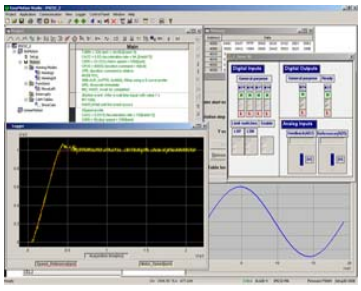
Go for Real Intelligent Motion

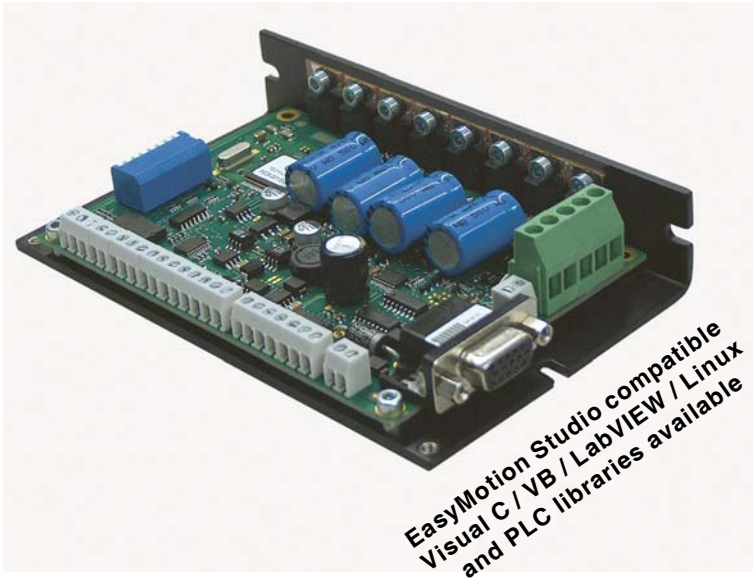
"Motion Control at the Click of a Mouse"

The configuration, tuning and programming of the ISD intelligent servo drives is easy using the powerful graphical Technosoft EasyMotion Studio.

The **first step,** consists of the system **configuration** by the selection and definition of system structure, motor type, feedback types and control mode. Test procedures help you to test and verify the hardware structure.

As the **second step,** the EasyMotion Studio supports the **parameterisation** and the **tuning** of the digital control loops of the selected motor control scheme. Data logging and scope facilities will capture variables during test movements for analysis and fine-tuning.





Features

- **Fully digital servo drive with embedded intelligence and PLC functionality**
- **Suitable for brushless DC, brushless AC (vector control), linear and DC brush motors**
- **Programmable with high level Technosoft EasyMotion Studio software for quick axis configuration and tuning**
- **Various control modes as:**
  - **Torque, speed or position control**
  - **Electronic gearing, contouring, profiling**
  - **Step motor emulation in BL mode (step and direction input)**
  - **External variables control capabilities (pressure, flow, temperature etc.)**
- **Powerful Technosoft Motion Language (TML) instruction set for definition and execution of motion sequences in:**
  - **Single or multi axis control (master or slave mode)**
  - **Standalone operation with Stored Motion sequences**
- **RS-232 serial communication**
- **CAN-Bus 2.0B up to 1 Mbit/s**
- **Accepts external digital or analogue reference inputs**
  - **Programmable I/O (4 outputs / 7 inputs)**
  - **2 analogue inputs 0/+5V reference and tacho (+/-10V opt.)**
  - **Differential quadrature encoder (RS422), digital Halls**
- **Power supply for logic: 12-36V**
- **Motor power supply: 12-36V (ISD720) and 12-72V (ISD860)**
- **Continuous output current: 20A (ISD720) and 12A (ISD860)**
- **Peak output current: 49.5A (ISD720) and 31A (ISD860)**
- **Protection for over current, short circuit, earth fault, over temperature, over- and under-voltage, I^2t, control error**
- **Compact open-frame design: 136 x 84 x 26 mm**

The **third step** may already be the use of the axis on your machine. Using high level TML commands, you can define and start on-line motion sequences via serial communication port from your host, PC, or an optional hand-held terminal. In the standalone mode, pre-stored motion sequences can be executed, which can be activated through programmable I/O lines.

Application notes with ready to run Motion Language program examples are available at www.technosoftmotion.com

Typical Applications

- **Systems with distributed motor control intelligence**
- **Packaging**
- **Printing**
- **Textile**
- **Medical**
- **Optics**
- **Automotive**
- **Environment**
- **Pick and place**
- **R&D / Laboratory**
- **Factory Automation**

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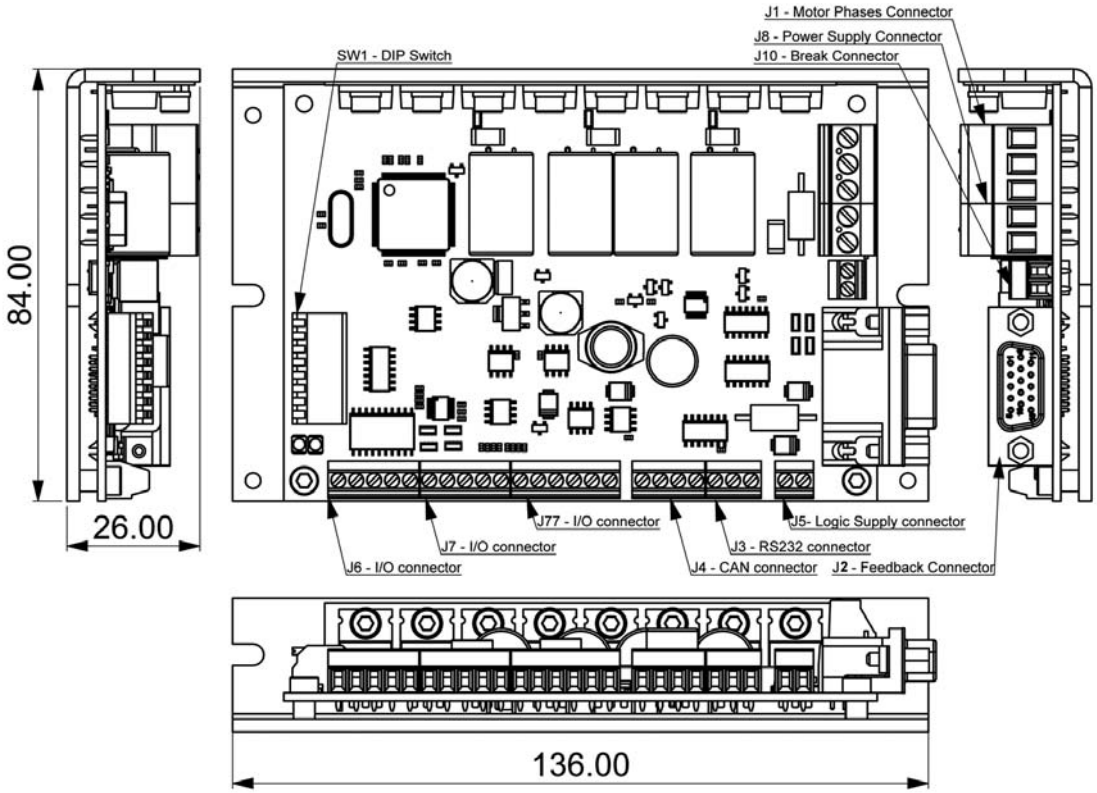
DIMENSIONS, SPECIFICATION, ORDERING INFORMATION
ISD720 / ISD860



Dimensions in mm. Drawings not to scale.

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
- Definition, programming and testing of motion sequences

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 observing the IEC - 61131 standard are available for Siemens, B&R and Omron PLCs.

ISD720/860 STARTER KITS

Complete evaluation packages for the ISD drives, containing the servodrive, motor, I/O board, EasyMotion Studio software that are supported by a collection of application notes and documentation.

ISD720 / ISD860 INTELLIGENT SERVO DRIVES

Electrical Specifications	ISD720	ISD860
DC supply voltage: logic	24V	24V
DC supply voltage: motor	36V	72V
Maximum continuous current	20A	12A
Peak current (xx sec. max.)*	49.5A	31A
Minimal load inductance (microHenry)**	50	150
Nominal switching frequency	20kHz	20kHz
Operating ambient temperature	0°C-40°C	0°C-40°C

* 2.5 sec. max. for ISD720 and 6.3 sec. max. for ISD860

**at 36V (ISD720) / 72V (ISD860) and 20kHz switching frequency

Ordering Information

P029.001.E001	**ISD720 Servo Drive 36V, 20A, RS232**
P029.001.E002	**ISD720 Servo Drive 36V, 20A, RS232 & CAN**
P029.001.E012	**ISD720 Servo Drive 36V, 20A, RS232 & CANopen**
P029.001.E101	**ISD860 Servo Drive 72V, 12A, RS232**
P029.001.E102	**ISD860 Servo Drive 72V, 12A, RS232 & CAN**
P029.001.E112	**ISD860 Servo Drive 72V, 12A, RS232 & CANopen**
P029.001.E084	**ISDxx0 Starter Kit for Brushless Motor**
P034.001.E002	**EasyMotion Studio software**
P040.001.Exxx	**TML_LIB Motion Libraries*** **

***ask for existing libraries types

FLEXIBILITY

Standard control schemes supported by the ISD Drives

Motor Types	Torque control	Speed control	Position control
Brushless DC / AC	✓	✓	✓
DC Brush	✓	✓	✓
Linear	✓	✓	✓

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