

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.

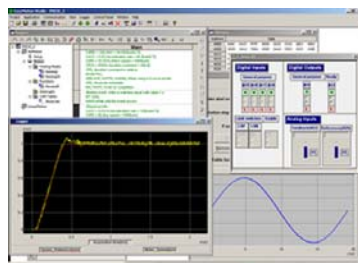
A complete set of high-level Technosoft Motion Language (TML) instructions permit to define and start complex motion sequences from your host, PC, or to execute pre-stored motion sequences selected from I/O lines, in a stand-alone mode.

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.



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EasyMotion Studio compatible
Visual C / VB / LabVIEW / Linux
and PLC libraries available

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, I²t, 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



Your
Next
Intelligent
Move

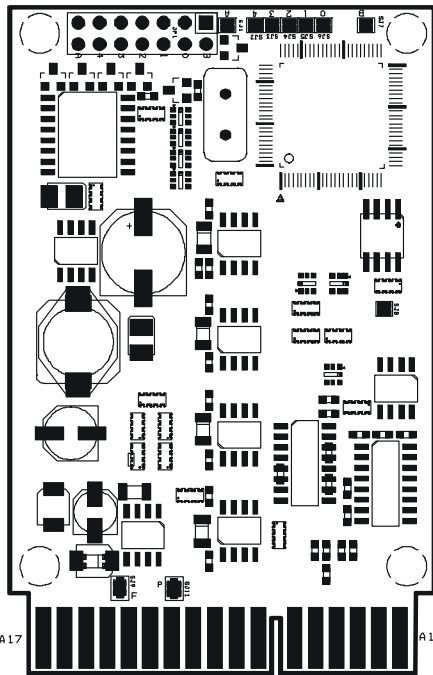


TECHNOSOFT
MOTION TECHNOLOGY

DIMENSIONS, SPECIFICATION, ORDERING INFORMATION

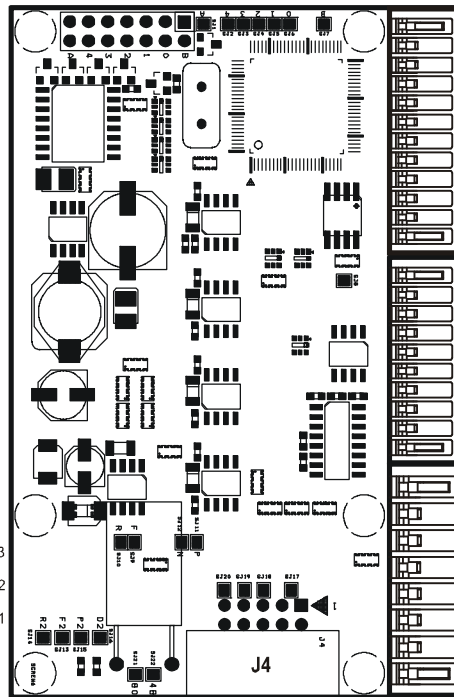
ISCM4805 / ISCM8005

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 +V_{mot}
 - 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**

FLEXIBILITY

**ask for existing libraries types

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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