

## EtherCAT<sup>®</sup> 4 & 8 Axis Stepper Drives Module



- > Economical Four-Axis and Eight axes Stepper Drives Module with EtherCAT Network interface
- > Up to 40Vdc, 3A per motor
- > Optional built-in 40Vdc, 240W AC/DC power supply
- > 8-Axis module 7 Unipolar drives and one Bipolar drive
- > 4-Axis module 3 Unipolar drives and one Bipolar drive
- > Open loop operation
- > Programmable current level per axis: 1A, 1.5A, 2A, 3A
- > Programmable microstep size per axis: Full, 1/2, 1/4, 1/8, 1/16
- > Two sets of P/D inputs and P/D outputs for Master/Slave operation
- > General purpose I/O: 6 inputs 6 outputs
- > Compact size

The SDM<sub>NT</sub> line of multi-axis open loop step motor drives modules are specifically designed to address the needs for economical solutions for machines with many open loop step motors operating as part of an EtherCAT network. It is fully supported by any of ACS' EtherCAT master controllers, such as the SPiiPlusNT, SPiiPlusNTM and SPiiPlusSC soft Controller.

The SDM<sub>NT</sub> is available in 4 and 8 axis versions, with or without built-in supply. Each unit includes one bipolar drive with up to 40Vdc, 3A. All other drives are unipolar with up to 40Vdc, 3A. The current level is individually programmable for each drive and can be set to the following levels: 1A, 1.5A, 2A and 3A. The step resolution is individually programmable for each drive and can be set to the following levels: full step, 1/2, 1/4, 1/8 and 1/16 step.

The SDM<sub>NT</sub> includes two sets of Pulse/Dir inputs and two sets of Pulse/Dir outputs for Master-Slave operation. There are 6 general purpose inputs and 6 general purpose outputs. Modules with 40Vdc, 240W built-in motor supply are fed by 95Vac to 240Vac. The 40Vdc is also available as an output to power additional units. Modules without built-in motor supply are fed by a 12Vdc to 40Vdc input. Each version is also fed with a 24Vdc control and logic supply that should not be removed during emergency conditions.

## Power Supplies

The module must be supplied by two power sources. A motor supply and a 24Vdc control supply. During emergency conditions there is no need to remove the control 24Vdc source. Modules with built-in motor supply are fed by 95Vac - 240Vac and generate 40Vdc bus voltage. The internal generated DC voltage is available through a dedicated output connector. Modules without built-in supply are fed by 12Vdc to 36Vdc.

## Cooling Fan

The model can simultaneously drive all axes at a current level of 1A. When operating with an optional cooling fan, part number FA-1608K-100/LF, the model can drive three axes at a current level of 3A.

## Control Supply

Range: 24Vdc  $\pm 10\%$   
Maximum input power: 10W  
Input current: 0.45A @ 21.6V  
Mating connector is not supplied

## Motor Type

Two phase step motor

## Feedback

None, open loop operation

## Digital Inputs

A total of 6 inputs  
Two isolated inputs, 24Vdc ( $\pm 20\%$ ), floating cathode and anode (two pins)  
Four RS422 inputs

## Certification

CE: Yes  
Safety: IEC 61010-1  
EMC: EN 61326-1

## Digital Outputs

A total of 6 outputs  
Two isolated outputs, 24Vdc ( $\pm 20\%$ ) Opto-isolated, floating cathode and anode (two pins), 50mA per output and 100mA for the two outputs  
Maximum voltage drop < 1.7V  
Four RS422 outputs

## Pulse Direction Interface

Inputs: two pairs. RS422. The input counter can be read by the Master controller  
Outputs: two pairs. RS422. Programmable to follow the Pulse/Dir generated for any of the internal drives

## Drive Protection

- > Short circuit
- > Over temperature
- > Over voltage
- > Under voltage

## Dimensions

290 x 130 x 90 mm<sup>3</sup> (L x W x H, including mounting brackets)

## Environment

Operating range: 0 to + 40°C  
Storage and transportation range: -25 to +60°C  
Humidity (operating range): 5% to 90% non-condensing

## Communication

Two EtherCAT ports, In and Out, RJ45 connector

## Specifications

Part Number X represents the number of axes and XX represents special options	SDMNT-X-040D-003-XX (No supply)	SDMNT-X-040A-003-XX (Built-in 240W motor supply)
Number of axes	4 or 8	
input voltage	12Vdc-40Vdc	95Vac - 240Vac ( $\pm 10\%$ )
Phase current [A]	Programmable 1A, 1.5A, 2A, 3A	
Max. input current @ input voltage	10.5A @ 40Vdc	4A @ 95Vac
Drive type	1 bipolar, 7 or 3 unipolar	
Max. output power [W]	420	240
Microstep size	Programmable Full, 1/2, 1/4, 1/8*, 1/16 of a step	
Heat dissipation at full cont. power [W]	50	34
Weight [gram]	1000	1700
Standards	CE (Safety, EMC), RoHS	

\* Only for unipolar drive type.

## Ordering options

Ordering Options	Field	Example User Selection	Values
Number of integrated step drives	1	8	4,8
Input Voltage	2	040A	040A- Built-in 40Vdc motor supply. Input: 95Vac-240Vac; 040D- Input: 12Vdc to 40Vdc.
Maximum motor current	3	003	003-3A
Special options and features	4	01	01 - For any EtehrCAT SPiiPlus based network

### Example: SDMNT-8-040A-003-01

Field	1	2	3	4	
PN	SDMNT	8	040A	003	01