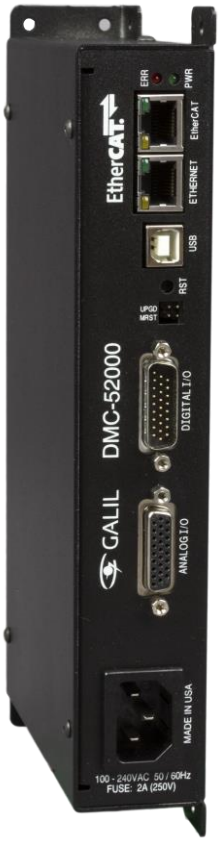
Galil Motion Control



DMC-52xx0

Datasheet

Galil Motion Control 270 Technlogy Way, Rocklin, CA 1-800-377-6329

Product Description

The DMC-52xx0 EtherCAT Controller is Galil Motion Control's first 8+ axis motion controller. It is a pure EtherCAT controller with the ability to control up to 32 drives and 2 IO modules in one, space efficient package.

The DMC-52xx0 is offered in 2, 4, 8, 16, and 32 axis formats. Coordinated moves can be done within banks of up to 8 axes allowing for minimal changes of Galil's programming language. The DMC-52xx0 operates in Cyclic Synchronous Position mode (CSP). In this mode, the servo control loop is closed on the EtherCAT drive while the Galil controller sends motion profile commands at rates of 1 kHz. Galil supports a variety of EtherCAT drives available to accommodate most applications.

Designed to solve complex motion problems, the DMC-52xx0 can be used for applications involving jogging, point-to-point positioning, position tracking, contouring, linear and circular interpolation, electronic gearing, ECAM and PVT.

The DMC-52xx0 features 8 uncommitted opto-isolated inputs and 8 uncommitted opto-isolated high power outputs. It also includes 8 uncommitted analog inputs and 8 uncommitted analog outputs (analog I/O is 12-bit standard, 16-bit option available). One 100 Mbps Ethernet port and one USB (serial) port is provided for communication with a host PC or external devices.

The DMC-52xx0 makes configuration and programming easy with just a handful of EtherCAT configuration commands and Galil's intuitive, two-letter programming language.

Features

- Available in 2, 4, 8, 16, and 32 axis configuration
- 10/100BASE-T Ethernet port; (1) EtherCAT Port;
- (1) USB (serial) port up to 115 kbaud
- Sample times as low as 1000 microseconds
- Cyclic Synchronous Position mode (CSP)
- Modes of motion include jogging, point-to-point positioning, position tracking, contouring, linear and circular interpolation, electronic gearing, ECAM and PVT
- Ellipse scaling, slow-down around corners, infinite segment feed and feed rate override
- Multitasking for concurrent execution of up to eight application programs
- Non-volatile memory for application programs (4000 Lines), variables and arrays (24000)
- Inputs including forward limits, reverse limits, and homing inputs are located on drives that support these inputs.
- Uncommitted, I/O:
  - 8 optically isolated inputs
  - 8 optically isolated high power outputs
  - 8 uncommitted analog inputs*
  - 8 uncommitted analog outputs*
  - High speed position latch (on drives that support this capability)
  - More I/O available with the RIO-47xxx or RIO-574x0
- Accepts single 90-250 V_{AC} input (50-60 Hz)
- Software libraries for Windows and Linux

* Analog I/O is 12-bit standard, 16-bit option available

Rev. 1 5/16/16

Motion Controller	
Processor	RISC-based clock multiplying processor with DSP functions
Communication	10/100 Base-T Ethernet with Auto MDIX Main USB (serial) port EtherCAT port
Program memory size	4000 lines x 80 characters
# of Variables	510
# of Arrays	24000 array elements in 30 arrays
Position Range	32-bit, automatic rollover
Maximum Velocity	TBD
Maximum Acceleration	TBD

Feature Specific I/O Local Axes	
Abort	5-24V_{DC} opto-isolated
Reset	5-24V_{DC} opto-isolated
Error out	Opto-isolated

Power and Mechanical	
Power requirements	90-250 V_{AC}, 5 W, 50-60 Hz
Operational temperature	0 – 70 deg C
Humidity	20 – 90 % RH, non-condensing
Dimensions	9.75” x 5.00” x 1.60”

Modes of Motion	
Position Relative & Position Absolute	Absolute and relative positioning following a trapezoidal velocity profile. Phase correction and profile smoothing available.
Jogging	Velocity control where no final endpoint is prescribed.
Vector Mode	2D motion path consisting of linear and arc segments. Motion along the path is continuous at the prescribed vector speed even at transitions between linear and circular segments.
Linear Interpolation	1-8 axes of coordinated linear profiling.
Gearing & Gantry Mode	Electronic gearing and gantry mode with ramped gearing.
Electronic Camming (ECAM)	Following an arbitrary trajectory based upon a master encoder position.
Contour	Allows any arbitrary profile and any set of axes to be prescribed.
PVT	Motion path described in incremental position, velocity, and change of time.

RoHS Compliant

General Purpose I/O			
	Number of I/O	**Voltage**	**Details**
Opto-isolated inputs	8	5-24 V_{DC}	Opt isolated bidirectional inputs
Opto-isolated outputs	8	12-24 V_{DC}	500mA Sourcing
Analog Inputs	8	±10, ±5, 0-5, 0-10 V_{DC}	12-bit, 16-bit optional
Analog Out	8	±10, ±5, 0-5, 0-10 V_{DC}	12-bit, 16-bit optional

Ordering Options

The DMC-52xx0 has the part number format “DMC-52xx0(Y),” where x designates the number of axes and Y designates different configuration options. The DMC is available in a 2, 4, 8, and 16 axis format. See the table below for configuration options.

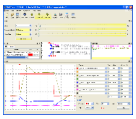
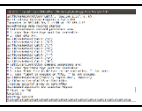
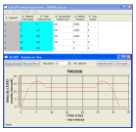
Use the Part Number Generator for building your DMC-52xx0
http://www.galil.com/order/part-number-generator/dmc-52xx0

DMC-52xx0(Y)

DMC-52xx0

DMC-52xx0 Options

Part Number	Description
16bit	16-bit analog inputs

Accessories		
Image	**Part Number**	**Description**
	GALIL DESIGN KIT (GDK)	Galil's seamless software for interacting with Galil controllers and PLCs
	GALILSUITE SOFTWARE	Servo Tuning and Analysis with Program Editor and Terminal (GalilSuite has limited support for the DMC-52xx0)
	GALILTOOLS SOFTWARE	GalilTools programming software for Galil controllers (GalilTools has limited support for the DMC-52xx0)
	EPICS SOFTWARE	Communication Drivers and Device Support to create a Galil EPICS IOC
	GALILPVT	Galil PVT Software for PVT mode of Motion
	CABLE-26-1M	26-pin HD male D to discrete wires-1 meter
	CABLE-26-1F	26-pin HD female D to discrete wires-1 meter
	CABLE-USB-2M	2 meter USB 2.0 A male to B male cable
	CABLE-USB-3M	3 meter USB 2.0 A male to B male cable
	ICS-48026-M	26-pin D HD male to screw terminals
	ICS-48026-F	26-pin D HD female to screw terminals