# **MMC Smart Drive Servo Amplifiers**

G&L Motion Control's MMC Smart Drive servo amplifiers provide 0.5kW to 24kW continuous output power in a compact, easy-to-apply package. Available in both 230VAC and 460VAC systems, MMC Smart Drives operate over a wide line voltage range.

Application of MMC Smart Drives is simple. The integral power supply and plug-and-play cable sets simplify installation. Configuration, tuning and maintenance are intuitive using PiCPro software with features including basic and expert parameter views, a software oscilloscope and auto-tune.

Use PiCPro's ladder logic, function block and structured text programming languages to develop complete multi-axis motion control solutions combining MMC Smart Drives and MMC Controls.



Feature Benefi	t		
Auto Tune	Automatically detect load inertia for simple servo tuning		
Digital design	Digital Signal Processor control for reliable, repeatable setup		
High Bandwidth Control Loops	Accommodates changing load conditions found in industrial machinery applications		
Plug-and-Play Cable Sets	Engineered motor power, motor feedback and control interface cable sets for noise-immune easy installation		
Software Protection	Over Voltage, Over Current and Over Temperature detection to protect the drive, motor and application		
Hardware Protection	Phase-to-phase and phase-to-ground short circuit protection		
Complete Motor Family Choose from seven standard motor families to get an ex for your application			
Integral Power Supply	Built-in Power Supply for simple installation		
24V DC Drive Control Power Maintain Drive Control power while line voltage is r troubleshooting and feedback tracking			
Feedback support	Select feedback technology appropriate to your application: incremental encoder, high resolution encoder or resolver		
Industrial I/O	Optically isolated I/O for noise immunity		
PiCPro Software	Drive setup and application motion programming using a single easy-to-navigate Windows program		
Software Oscilloscope	Graphical real-time view of servo system performance		
Agency Approval	UL, cUL and CE Mark allow worldwide application		

### **G&L Motion Control, LLC**

672 South Military Road, PO Box 1960, Fond du Lac, WI 54936-1960, USA Telephone: (920) 921-7100, Fax: (920) 906-7669, www.glcontrols.com A Company of ThyssenKrupp Technologies



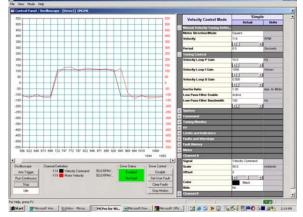
Thyssen Krupp

## PiCPro Configuration Software

	0	- 3 2 12 3 3 3 3	5 0 M 🖬	
		Drive Data - [Untitled] ONLINE		
Drive Label Connected?   In_Feed_1 YES	Expert View	In_Feed_1 (connected) Actual Units		
<end li<="" of="" th=""><th>System Command</th><th>Attus</th><th>Units</th></end>		System Command	Attus	Units
	Ē	Analog Command	29	millioits
		Input Polarity	Forward	
		Input Offset	-18	millinote
		Active Operating Mode	Velocity	
		Velocity Mode Command Scale	450.0	RPMVaR
		Velocity Command Limit	4500	RPM
		AccDec Limits Active	NotActive	
		Accel Limit	20000	RPWsec .
		Decel Limit	20000	RPWsec
		Torque Mode Command Scale	93	m4/Volt
		Current - Plus Enable	<b>V</b>	
		Current - Minus Enable	<b>Ö</b>	
		Velocity Command	4	RPM
		Current Command	0.00	Amps
	+	Tuning 10 Limits and Indicators		
		Drive Bus Over Voltage Fault Limit	400	Vaits
		Drive Over Current Fault Limit	9.74	Amps
		Over Current Fault Limit	9.30	Anyos
		<b>Drive Heatsink Temp. Warning Limit</b>	70	Degrees G
		Drive Heatsink Temp. Fault Limit	105	Degrees C
		Drive Ambient Temp. Warning Limit	N/A	Degrees C
		Drive Ambient Temp. Fault Limit	NA	Degrees C
		Motor Temp. Warning Limit	N40A.	Degrees C
		Motor Temp. Fault Limit	N/A	Degrees C
		Motor Calculated Terms Warning	100	Oseress C

**MMC Smart Drive Family** 

## PiCPro Oscilloscope Software



PiCPro provides drive configuration and tuning as well as motion control programming in an intuitive Windows environment.

				-
		Cont. Current	Peak Current	Dimensions
			Current	
Model	Package	(amps)	(amps)	inches (mm) WxHxD
MMC-SD-0.5-230	Micro	2.5	7.5	3.69(94) x 10.13(257) x 6.12(156)
MMC-SD-1.0-230	Micro	5.0	15.0	4.69(119) x 10.13(257) x 6.12(156)
MMC-SD-2.0-230	Micro	10.0	30.0	4.69(119) x 10.13(257) x 6.12(156)
MMC-SD-1.3-460	Size 1	3.0	6.0	4.14(105) x 13.66(347) x 8.35(212)
MMC-SD-2.4-460	Size 1	5.5	11.0	4.14(105) x 13.66(347) x 8.35(212)
MMC-SD-4.0-460	Size 2	9.0	18.0	4.15(106) x 16.85(428) x 11.35(288)
MMC-SD-6.0-460	Size 2	13.5	27.0	4.15(106) x 16.85(428) x 11.35(288)
MMC-SD-8.0-460	Size 2	18.0	36.0	4.15(106) x 16.85(428) x 11.35(288)
MMC-SD-12.0-460	Size 3	27.5	55.0	6.1(155) x 21.65(550) x 11.36(288)
MMC-SD-16.0-460	Size 3	36.5	73.0	6.1(155) x 21.65(550) x 11.36(288)
MMC-SD-24.0-460	Size 3	55.0	110.0	6.1(155) x 21.65(550) x 11.36(288)

Model Naming Convention: MMC-SD-continuous output power-nominal line voltage. Operating voltage for 230 VAC drives is 100-240 VAC single phase and for 460 VAC drives is 180-528 VAC three phase.

### **MMC Smart Drive Features**

Feature	Description
Assignable Digital Inputs	8 24V DC optically isolated inputs
Assignable Digital Outputs	4 24V DC optically isolated outputs, short circuit protected
Assignable Relay Output	1 Relay Output (typically used for brake control)
Analog Input	1 Analog Velocity or Torque command input
Feedback One (F1)	Motor feedback – incremental encoder, high resolution
	encoder, resolver (resolver interface option module required)
Feedback Two (F2)	Secondary feedback – incremental encoder
Drive Control Power	24V DC input for control power, independent of power
	section line voltage input

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