

The DigiFlex Performance (DP) Series digital servo
drives are designed to drive brushed and brushless
servomotors. These fully digital drives operate in
torque, velocity, or position mode and employ Space
Vector Modulation (SVM), which results in higher bus
voltage utilization and reduced heat dissipation
compared to traditional PWM. The command source
can be generated internally or can be supplied
externally. In addition to motor control, these drives
feature dedicated and programmable digital and
analog inputs and outputs to enhance interfacing with
external controllers and devices.

Description

This DP Series drive features a single RS232/RS485 interface used for drive configuration and setup. Drive commissioning is accomplished using DriveWare, available at www.a-m-c.com.

All drive and motor parameters are stored in non-volatile memory.

Power Range	
Peak Current	60 A (42.4 A _{RMS})
Continuous Current	30 A (21.2 A _{RMS})
Supply Voltage	40 - 270 VAC



Features

- ▲ Four quadrant regenerative operation
- ▲ Space vector modulation (SVM) technology
- ✓ Fully digital state-of-the-art design
- Programmable gain settings

- Fully configurable current, voltage, velocity and position limits
- ▲ PIDF velocity loop
- ▲ PID + FF position loop
- Compact size, high power density

MODES OF OPERATION

- Current
- Position
- Velocity

COMMAND SOURCE

- ±10 V Analog
- 5V Step & Direction
- Encoder Following

FEEDBACK SUPPORTED

- Resolver
- ±10 V Analog
- Auxiliary Incremental Encoder

INPUTS/OUTPUTS

- 3 Programmable Analog Inputs
- 0 Programmable Analog Outputs
- 5 Programmable Digital Inputs (Differential)
- 5 Programmable Digital Inputs (Single-Ended)
- 4 Programmable Digital Outputs

COMPLIANCES & AGENCY APPROVALS

- RoHS
- UL/cUL Pending
- CE Pending



SPECIFICATIONS

	Power Stage Specifications						
Description	Units	Value					
AC Supply Voltage	VAC	40 - 270					
DC Supply Voltage	VDC	0 - 400					
Over Voltage Limit	VDC	439					
Under Voltage Limit	VDC	55					
Logic Supply Voltage	VDC	20 - 30					
Peak Output Current	Α	60					
Maximum Continuous Output Current	Α	30					
Maximum Continuous Output Power	W	12000					
Maximum Power Dissipation at Continuous Current	W	600					
Internal Bus Capacitance	μF	1650					
Internal Shunt Resistor	-	Yes					
Minimum Load Inductance (Line-To-Line) ¹	μH	600					
Switching Frequency	kHz	20					
Low Voltage Supply Outputs	-	+5 VDC (250 mA)					
	Control	Specifications					
Description	Units	Value					
Communication Interfaces	-	RS-232, RS-485					
Command Sources	-	±10 V Analog, 5V Step & Direction, Encoder Following					
Feedback Supported	-	±10 V Analog, Auxiliary Incremental Encoder, Resolver					
Commutation Methods	-	Sinusoidal					
Modes of Operation	-	Current, Position, Velocity					
Motors Supported	-	Brushed, Brushless, Induction, Voice Coil					
Hardware Protection	-	40+ Configurable Functions, Over Current, Over Temperature (Drive & Motor), Over Voltage, Short Circuit (Phase-Phase & Phase-Ground), Under Voltage					
Programmable Digital Inputs/Outputs (PDIs/PDOs)	-	10/4					
Programmable Analog Inputs/Outputs (PAIs/PAOs)	-	3/0					
Current Loop Sample Time	μs	50					
	μs	100					
Velocity Loop Sample Time		100					
Velocity Loop Sample Time Position Loop Sample Time	μs	100					
· · · · · · · · · · · · · · · · · · ·	μs Vrms	4 Vrms @ 5 kHz					
Position Loop Sample Time	<u> </u>	144					

Notes

1. Low inductance motors, such as 'pancake' and 'basket-wound', require external inductors. The Minimum Load Inductance provided assumes the highest allowed bus voltage. Lower inductances are acceptable for lower bus voltages.

To Be Determined



HARDWARE SETTINGS

Switch Functions

Switch	Description	Setting	
		On	Off
1	Bit 0 of binary value of drive address/ID.	1	0
2	Bit 1 of binary value of drive address/ID.	1	0
3	Bit 2 of binary value of drive address/ID.	1	0
4	Bit 3 of binary value of drive address/ID.	1	0
5	Bit 4 of binary value of drive address/ID.	1	0
6	Bit 5 of binary value of drive address/ID.	1	0
7	7 Bit 0 of binary value of drive bit rate setting.		0
8	Bit 1 of binary value of drive bit rate setting.	1	0

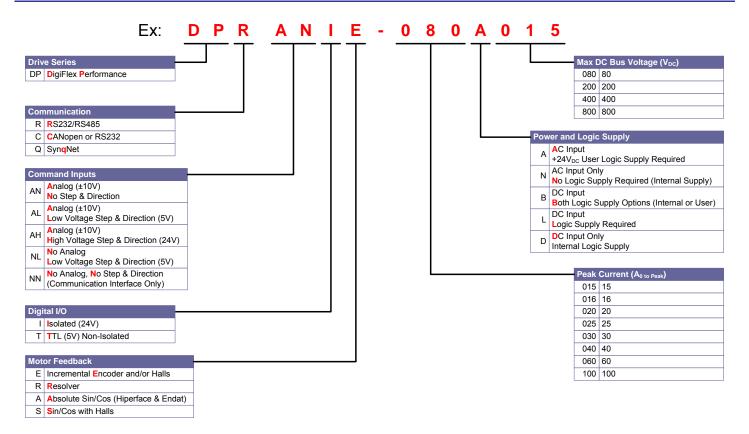
Additional Details

The drive can be configured to use the address and/or bit rate stored in non-volatile memory by setting the address and/or bit rate value to 0. Use the table below to map actual bit rates to a bit rate setting.

Bit Rate (I	Value For Bit Rate Setting		
CANopen	RS-485	value For Bit Rate Setting	
Load from non-volatile memory	Load from non-volatile memory	0	
500	9.6	1	
250	38.4	2	
125	115.2	3	



PART NUMBERING INFORMATION



Disclaimer

All specifications in this document are subject to change without written notice. Actual product may differ from pictures provided in this document.