

external controllers and devices.

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

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	25 A (17.7 A <sub>RMS</sub> )			
Continuous Current	12.5 A (8.8 A <sub>RMS</sub> )			
Supply Voltage	40 - 190 VDC			



#### **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 High Speed Captures
- 4 Programmable Analog Inputs
- 1 Programmable Analog Output
- 3 Programmable Digital Inputs (Differential)
- 7 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		
DC Supply Voltage	VDC	40 - 190		
Over Voltage Limit	VDC	198		
Under Voltage Limit	VDC	35		
Peak Output Current	Α	25		
Maximum Continuous Output Current	Α	12.5		
Maximum Continuous Output Power	W	2375		
Maximum Power Dissipation at Continuous Current	W	118.8		
Minimum Load Inductance (Line-To-Line) <sup>1</sup>	μH	250		
Switching Frequency	kHz	20		
Control Specifications				

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)	-	4/1		
Current Loop Sample Time	μs	50		
Velocity Loop Sample Time	μs	100		
Position Loop Sample Time	μs	100		
Resolver Reference/Excitation Signal	Vrms	4 Vrms @ 5 kHz		
Expected Resolver Transformation Ratio	Vrms	0.5		
Mechanical Specifications				

# Mechanical Specifications

# To Be Determined

#### **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.



# HARDWARE SETTINGS

# **Switch Functions**

Switch	Switch Description	Set	ting
o miton		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	Bit 0 of binary value of drive bit rate setting.	1	0
8	Bit 1 of binary value of drive bit rate setting.	1	0

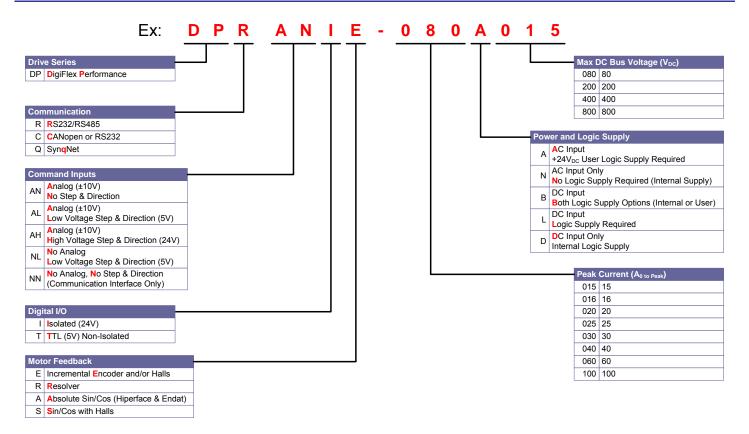
#### Additional Details

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.