

Description

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 drive can be configured for a variety of external command signals. Commands can also be configured using the drive's built-in Motion Engine, an internal motion controller used with distributed motion applications. 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.

This DP Series drive features a single RS-232/RS-485 interface used for drive configuration and setup. Drive commissioning is accomplished using DriveWare® 7, available for download 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	100 - 240 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
- 16-bit Analog to Digital Hardware
- Built-in brake/shunt regulator
- ✓ Internal brake/shunt resistor
- On-the-Fly Mode Switching
- On-the-Fly Gain Set Switching

MODES OF OPERATION

- Current
- Position
- Velocity
- Hall Velocity

COMMAND SOURCE

- PWM and Direction
- Encoder Following
- Over the Network
- ±10 V Analog
- 24V Step and Direction
- Indexing
- Jogging

FEEDBACK SUPPORTED

- Halls
- Incremental Encoder
- ±10 VDC Position
- Auxiliary Incremental Encoder
- Tachometer (±10 VDC)

INPUTS/OUTPUTS

- 3 High Speed Captures
- 4 Programmable Analog Inputs (16-bit/12-bit Resolution)
- 3 Programmable Digital Inputs (Differential)
- 7 Programmable Digital Inputs (Single-Ended)
- 4 Programmable Digital Outputs (Single-Ended)

COMPLIANCES & AGENCY APPROVALS

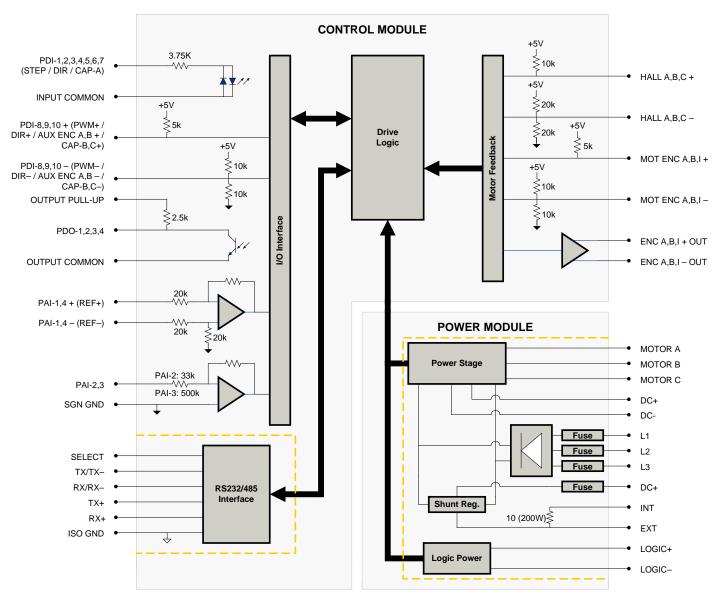
- UI
- cUL
- CE Class A (LVD)
- CE Class A (EMC)
- RoHS



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BLOCK DIAGRAM



US and Canadian safety compliance with UL 508c, the industrial standard for power conversion electronics. UL registered under file number E140173. Note that machine components compliant with UL are considered UL registered as opposed to UL listed as would be the case for commercial products. Compliant with European CE for both the Class A EMC Directive 2004/108/EC on Electromagnetic Compatibility (specifically EN 61000-6-4:2007 and EN 61000-6-2:2005) and LVD requirements of directive 2006/95/EC (specifically EN 60204-1:2006), a low voltage directive to protect users from electrical shock. RoHS (Reduction of Hazardous Substances) is intended to prevent hazardous substances such as lead from being manufactured in electrical and electronic equipment.



SPECIFICATIONS

Read Oldgee NAC (VDC) 2010 (383) AC Supply Minimum VAC 100 - 240 AC Supply Minimum VAC 204 AC Supply Minimum VAC 204 AC Supply Filmen 1 AC 3 AC Supply Filmen 1 AC 3 AC Supply Filmen 1 AC 30 - 0 DC Supply Vallage Rangel VDC 127 - 273 DC Bus Christory Oldreg VDC 427 - 273 DC Bus Christory Oldreg VDC 20 - 30 (8 850 nW) DC Bus Christory Oldreg ND 20 - 30 (8 850 nW) Manimum Post Output Coursel A [Arms] 50 (242) Macconfinious Output Power Raced Vallage W 880 Macconfinious Output Power Raced Vallage W 280 Macconfinious Output Power Raced Vallage W	Description	Power Units	Specifications Value	
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DC Supply Visitings Range	·			
DC Bits Under Votage Limit VDC 429 Copic Supply Voltage VDC 35 Logic Supply Voltage VDC 20 - 50 (8 850 mA) Maximum Post Output Current A Armal 40 (42) Maximum Centinous Output Current A Armal 30 (21 2) Maximum Post Output Current A Armal 30 (21 2) Max. Continous Output Power & Rated Voltage W 380 Max. Continous Power Dissipation & Rated Voltage W 380 Max. Continous Power Dissipation & Rated Voltage W 380 Max. Continous Power Dissipation & Rated Voltage W 380 Max. Continous Output Current In His 1850 Max. Continous Output Current W 380 Max. C				
DC Bus Unifor Voltage Limit VDC 55	***			
Logic Supply Voltage VOC 20 - 30 (@ 850 mA)	·			
Maximum Continuous Output Current A (Arms) 30 (24.24)			**	
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Max. Continuous Output Prower 9 Rated Voltage W 8840 Max. Continuous Dever Designation ® Rated Voltage W 300 External Bus Capacitance μF 1850 External Davis Capacitance μF 1850 External Davis Capacitance μF 1850 Minimum Load Inductions (Line To Line)* μH 600 Switching Froquency kHz 20 Switching Froquency kHz 20 Act Line Flues Rating A 25 A time-delay fuses Low Voltage Supply Outputs - 4 VDC (280 ml) Communication Interfaces - 8 -845/232 Value Communication Interfaces - 8 -845/232 Xusual Va	·	· · ·		
Max. Continuous Power Dissipation (il) Rated Voltage W 380 Internal Bux Cipacitance μP 1650 External Stunf Resistor Minimum Resistance Ω 10 Minimum Load Inductance (Line-To-Line)* μH 600 Switching Frequency MHz 20 Minimum Dudyur PVM Duy Cycle % 100 Internal Shurt Peach Rang A 3.5 A ktra-delay fuse AC Line Fix Reting A 2.0 A fast-acting fuses Voltage Supply Outputs - 5VPC (255 nm.) <td< td=""><td>·</td><td></td><td></td></td<>	·			
Information	•			
Eleman Shunt Resistor Minimum Resistance D 10				
Minimum Load inductance (Line-To-Line)* μH 500	· · · · · · · · · · · · · · · · · · ·	· ·		
Selecting Frequency	External Shunt Resistor Minimum Resistance	Ω	10	
Maximum Output PVM Duty Cycle % 100 Internal Shunt Fuse Rating A 5 A time-delay fuse AC Line Fuse Rating A 20 A last-acting fuses Low Voitage Supply Outputs - 45 VDC (250 mA) Common Secription Output Control Specifications Value Command Sources - 85-889/232 Value Command Sources - 85-890/232 Value Command Sources - 85-890/232 Value Design Description (activated of Pollowing, Over the Network, PVM and Dincheding, Jogging) Feedback Supported - 85-890/232 Secription (activated properties) PVM and Dincheding, Jogging Modes of Operation - Current, Islal Valocity, Position, Auditary Increnental Encoder, Falls, Incremental Encoder, Tachometer Communication Internal Share Supported - Current Line Internal Plantic Properties (activated properties) Motors Supported - Current Line Internal Plantic Pla	Minimum Load Inductance (Line-To-Line) ⁵			
Internal Shunt Fuse Rating	Switching Frequency			
AC Line Fuse Rating A 2 A SVDC (280 mA) Low Voltage Supply Outputs Control Specifications Control Specifications Description Value Command Sources 5 RS-485/232 Command Sources -10 V Analog, 24V Step and Direction, Encoder Following, Over the Network, PVM and Direction, Encoder Following, Over the Network, PVM and Direction Application (Application) Feedback Supported -2 ±10 V XP Opesition, Auxiliary Incremental Encoder, Halls, Incremental Encoder, Tachometer VDC) Commutation Methods -3 Sinusoidal, Trapezoidal Motors Supported -4 Current, Hall Velocity, Position, Velocity Motors Supported -5 Current, Hall Velocity, Position, Velocity Motors Supported -6 Closed Loop Vector, Single Phase (Brushed, Voice Coll, Inductive Load), Thee Phase (Prushed Voice Voice Coll, Inductive Load), Thee Phase (Prushed Voice Coll, In	Maximum Output PWM Duty Cycle	%	100	
Low Voltage Supply Outputs control Specifications Control Specifications Value Communication Interfaces RS-485232 410 V Anabag, 24V Step and Direction, Encoder Following, Over the Network, PWM and Directions Jogging Feedback Supported -0 410 VDC Position, Auditary Incremental Encoder, Halls, Incremental Encoder, Tachometer VDC Communation Methods -0 Sinuscidal, Trapezoidal Modes of Operation -0 Current, Half Velocity, Position, Velocity Motors Supported -0 Current, Half Velocity, Position, Velocity Motors Opported -0 Current, Half Velocity, Position, Velocity Motors Supported -0 Current Half Velocity, Position, Velocity Motors Supported -0 Current, Half Velocity, Position, Velocity Motors Supported -0 Current, Half Velocity, Position, Velocity Programmable Digital Inputs Outputs (PAIs/PAOs) -0 10 Programmable Digital Inputs	Internal Shunt Fuse Rating	A	5 A time-delay fuse	
Obescription Communication Interfaces C. Mils Nature Communication Interfaces	AC Line Fuse Rating	A	20 A fast-acting fuses	
Description Units R8-485/232 Communication Interfaces 1.0 Whanlog, 24V Step and Direction, Encoder Following, Over the Network, PWM and Direction and Post of Communication Methods Feedback Supported 2. \$410 VDC Position, Auxiliary Incremental Encoder, Halls, Incremental Encoder, Tachometer Volco Modes of Operation 2. \$10 Sirusoidal, Trapezoidal Modes of Operation 2. \$20 Current, Hall Velocity, Position, Velocity Motors Supported 2. \$20 Current, Hall Velocity, Position, Velocity Motors Supported 2. \$20 Current, Hall Velocity, Position, Velocity Hardware Protection 2. \$20 Current, India Velocity, Position, Velocity Programmable Digital Inputs/Outputs (PDIs/PDOs) 2. \$104 Programmable Analog Inputs/Outputs (PDIs/PDOs) 2. \$40 C Programmable Analog Inputs/Outputs (PAIs/PAOs) 4.0 Welogate Loop Sample Time 4.0	Low Voltage Supply Outputs	-	+5 VDC (250 mA)	
Communication Interfaces - RS-485/232 Command Sources - 140 V Anabag, 24V Step and Direction, Encoder Following, Over the Network, PWM and Direction and Indexing, Jogging 1 (Jogging) Feedback Supported - VDCD Position, Auxiliary Incremental Encoder, Halls, Incremental Encoder, Tachometer VDCD Communication Methods - Sinusoidal, Trapezoidal Motors Gorgania - Current, Hall Velocity, Position, Velocity Motors Supported - Closed Loop Vector, Single Phase (Bushed, Voice Coll, Inductive Load), Three Phase (Brutardware Protection Hardware Protection - Closed Loop Vector, Single Phase (Bushed, Voice Coll, Inductive Load), Three Phase (Brutardware Protection) Programmable Analog Inputs/Outputs (PDIs/PDOs) - 104 Programmable Analog Inputs/Outputs (PAIs/PAOs) - 4/0 Primary I/O Log Level - 2 24 VDC Current Loop Sample Time µs 100 Velocity Loop Sample Time µs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shurt Resistor - Yes Sec (1 x Y x S) Yes Step (H	Decemention			
Command Sources ±10 V Analog, 24V Step and Direction, Encoder Following, Over the Network, PWM and Directback Supported Feedback Supported ±10 VDC Position, Auxiliary Incremental Encoder, Halls, Incremental Encoder, Tachometer VDC Commutation Methods ±10 VDC Position, Auxiliary Incremental Encoder, Halls, Incremental Encoder, Tachometer VDC Modes of Operation ±10 Current, Hall Velocity, Position, Velocity Motors Supported ±10 Current, Hall Velocity, Position, Velocity Hardware Protection ±10 Current, Hall Velocity, Position, Velocity Programmable Biglial Inputs/Outputs (PDIa/PDOs) ±10/4 Programmable Analog Inputs/Outputs (PAIs/PAOs) ±10/4 Primary I/O Logic Level ±24 VDC Current Loop Sample Time µs 50 Visionity Loop Sample Time µs 100 Visionity Loop Sample Time µs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Registor ±7 Ves Internal Shunt Registor ±7 Ves Internal Shunt Registor ±7 Ce Class A (EMC), CE Class A (EVD), cUL, RoHS, UL Size (H x W x D) mm (in) 23.47 x 161.8 x 151.3 (9.2 x 6.4 x 6) Wei	•			
Indexing. Joging		-	1 1 1 1 1	
February Alphonome Communication Methods		-	Indexing, Jogging	
Modes of Operation	···	-	VDC)	
Motors Supported - Closed Loop Vector, Single Phase (Brushed, Voice Coil, Inductive Load), Three Phase (Brushadvare Protection - 40+ Configurable Functions, Over Current, Over Temperature (Drive & Motor), Over Voltage (Circuit (Phase-Phase & Phase-Ground), Under Voltage		-		
Hardware Protection 40- Cnofigurable Functions, Over Current, Over Temperature (Drive & Motor), Over Voltage Circuit (Phase-Phase & Phase-Ground), Under Voltage Programmable Digital Inputs/Outputs (PDIs/PDOs) - 10/4 Programmable Analog Inputs/Outputs (PAIs/PAOs) - 4/0 Primary I/D Logic Level - 24 VDC Current Loop Sample Time μs 50 Velocity Loop Sample Time μs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Registor - Yes Internal Shunt Resistor - Yes Description Mechanical Specifications Velocity (Law W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (cz) 4495 (158.6) Heastink (Base) Temperature Range ⁶ ° C (°F) -40.85 (40 - 185) Storage Temperature Range ° C (°F) -40.85 (40 - 185) Storage Temperature Range ° C (°F) -40.85 (40 - 185) Storage Temperature Range ° C (°F) -5 (32 - 167) Storage Temperature Range ° C (°F) -5 (32 - 167) Storage Temperature Range ° C (°F) -5 (·	-		
Factoriate Protection -	Motors Supported	-		
Programmable Analog Inputs/Outputs (PAIs/PAOs) - 4/0 Primary I/O Logic Level - 24 VDC Current Loop Sample Time μs 100 Velocity Loop Sample Time μs 100 Position Loop Sample Time μs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Regulator - Yes Internal Shunt Registor - Yes Agency Approvals - Yes Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range ⁶ °C (°F) -0.75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor - Panel Mount Cooling System - Natural Convection IP Rating - IP10 +24V LOGIC Connector - 9-pin, female D-sub COMM Connector - 9-pin, female D-sub COMM Connector - 5-contact, 13 mm spaced,			Circuit (Phase-Phase & Phase-Ground), Under Voltage	
Primary I/O Logic Level - 24 VDC Current Loop Sample Time μs 50 Velocity Loop Sample Time μs 100 Position Loop Sample Time μs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Regulator - Yes Internal Shunt Resistor - Yes Mechanical Specifications Units Value Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Rangeé °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor - Panel Mount Coling System - Natural Convection IP Rating - 1P10 +24V LOGIC Connector - 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector - 9-pin, flemale D-sub </td <td></td> <td>-</td> <td></td>		-		
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Velocity Loop Sample Time μs 100 Position Loop Sample Time μs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Regulator - Yes Internal Shunt Resistor - Yes Description Mechanical Specifications Units Value Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Size (H x W x D) mm (in) 23.47 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Weight - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Weight - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Weight - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Weight - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Weight - - - -	Primary I/O Logic Level	-	24 VDC	
Position Loop Sample Time μs 100 Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Regulator - Yes Mechanical Shunt Resistor Value Description Mechanical Specifications Value Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, ROHS, UL Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) 40 - 85 (-40 - 185) Form Factor Panel Mount Cooling System - Natural Convection IP Rating - Natural Convection +24V LOGIC Connector - Natural Convection +24V LOGIC Connector - 15-pin, high-density, male D-sub COMM Connector - 9-pin, female D-sub COB BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	Current Loop Sample Time	μs	50	
Maximum Encoder Frequency MHz 20 (5 pre-quadrature) Internal Shunt Regulator - Yes Internal Shunt Resistor - Yes Mechanical Specifications Value Description Value Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range ⁶ °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor Panel Mount Cooling System - Natural Convection IP Rating - IP10 +24V LOGIC Connector - 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector - 15-pin, high-density, male D-sub COMM Connector - 9-pin, female D-sub DC BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block <td>Velocity Loop Sample Time</td> <td>μs</td> <td>100</td>	Velocity Loop Sample Time	μs	100	
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Description	Maximum Encoder Frequency	MHz	20 (5 pre-quadrature)	
DescriptionMechanical UnitsSpecifications ValueAgency Approvals-CE Class A (EMC), CE Class A (LVD), cUL, RoHS, ULSize (H x W x D)mm (in)234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6)Weightg (oz)4495 (158.6)Heatsink (Base) Temperature Rangeé°C (°F)0 - 75 (32 - 167)Storage Temperature Range°C (°F)-40 - 85 (-40 - 185)Form Factor-Panel MountCooling System-Natural ConvectionIP Rating-IP10+24V LOGIC Connector-2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flangeAUX ENCODER Connector-15-pin, high-density, male D-subDC BUS / BRAKE RESISTOR Connector-9-pin, female D-subDC BUS / BRAKE RESISTOR Connector-5-contact, 13 mm spaced, dual-barrier terminal blockFEEDBACK Connector-15-pin, high-density, female D-subVO Connector-26-pin, high-density, female D-subMOTOR POWER / DC BUS Connector-5-contact, 13 mm spaced, dual-barrier terminal block	Internal Shunt Regulator	-	Yes	
Description Units Value Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range ⁴ °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor - Panel Mount Cooling System - Natural Convection IP Rating - Natural Convection +24V LOGIC Connector - 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector - 15-pin, high-density, male D-sub COMM Connector - 9-pin, female D-sub DC BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block FEEDBACK Connector - 15-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 26-pin, high-density, female D-sub	Internal Shunt Resistor	-	Yes	
Agency Approvals - CE Class A (EMC), CE Class A (LVD), cUL, RoHS, UL Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range ⁶ °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor Panel Mount Cooling System - Natural Convection IP Rating - IP10 2-4V LOGIC Connector 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector 15-pin, high-density, male D-sub COMM Connector 9-pin, female D-sub DC BUS / BRAKE RESISTOR Connector 5-contact, 13 mm spaced, dual-barrier terminal block FEEDBACK Connector 15-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector 2-contact, 13 mm spaced, dual-barrier terminal block				
Size (H x W x D) mm (in) 234.7 x 161.8 x 151.3 (9.2 x 6.4 x 6) Weight g (oz) 4495 (158.6) Heatsink (Base) Temperature Range ⁶ °C (°F) 0 - 75 (32 - 167) Storage Temperature Range °C (°F) -40 - 85 (-40 - 185) Form Factor - Panel Mount Cooling System - Natural Convection IP Rating - IP10 +24V LOGIC Connector - 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector - 15-pin, high-density, male D-sub COMM Connector - 9-pin, female D-sub DC BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block FEEDBACK Connector - 15-pin, high-density, female D-sub I/O Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	•			
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Form Factor - Panel Mount Cooling System - Natural Convection IP Rating - IP10 +24V LOGIC Connector - 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange AUX ENCODER Connector - 15-pin, high-density, male D-sub COMM Connector - 9-pin, female D-sub DC BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block FEEDBACK Connector - 15-pin, high-density, female D-sub I/O Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block				
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DC BUS / BRAKE RESISTOR Connector - 5-contact, 13 mm spaced, dual-barrier terminal block FEEDBACK Connector - 15-pin, high-density, female D-sub V/O Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	AUX ENCODER Connector	-	15-pin, high-density, male D-sub	
FEEDBACK Connector - 15-pin, high-density, female D-sub VO Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	COMM Connector	-	9-pin, female D-sub	
I/O Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	DC BUS / BRAKE RESISTOR Connector	-	5-contact, 13 mm spaced, dual-barrier terminal block	
I/O Connector - 26-pin, high-density, female D-sub MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	EEEDBACK Connector	-	15-pin, high-density, female D-sub	
MOTOR POWER / DC BUS Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	FEEDBACK COIIIIECIOI			
		-	26-pin, high-density, female D-sub	
POWER Connector - 5-contact, 13 mm spaced, dual-barrier terminal block	I/O Connector	-		

Notes

- Can operate on single-phase VAC if peak/cont. current ratings are reduced by at least 30%.

 Large inrush current may occur upon initial DC supply connection to DC Bus.

 Capable of supplying drive rated peak current for 2 seconds with 10 second foldback to continuous value. Longer times are possible with lower formation of the fire Fix (877) SERV098

 P = (DC Rated Voltage) * (Cont. RMS Current) * 0.95.

 Lower inductance is acceptable for bus voltages well below maximum. Use external inductance to meet requirements. 2. 3.

- Additional cooling and/or heatsink may be required to achieve rated performance. 6.





PIN FUNCTIONS

	+24V LOGIC - Logic Power Connector			
Pin	Name	Description / Notes	1/0	
1	LOGIC GND	Logic Supply Ground	GND	
2	LOGIC PWR	Logic Supply Input	l	

AUX ENCODER - Auxiliary Feedback Connector			
Pin	Name	Description / Notes	1/0
1	RESERVED	Reserved	-
2	RESERVED	Reserved	-
3	RESERVED	Reserved	-
4	PDI-8 + (PWM+ / AUX ENC A+ / CAP-B+)	Programmable Digital Input or PWM or Auxiliary Encoder or High Speed Capture (For	1
5	PDI-8 - (PWM- / AUX ENC A- / CAP-B-)	ingle-Ended Signals Leave Negative Terminal Open)	
6	PDI-9 + (DIR+ / AUX ENC B+ / CAP-C+)	Programmable Digital Input or Direction Input or Auxiliary Encoder or High Speed Capture (For Single-Ended Signals Leave Negative Terminal Open)	
7	PDI-9 - (DIR- / AUX ENC B- / CAP-C-)		
8	PDI-10 +	Programmable Digital Innut /For Single Ended Signals Legue Negative Terminal Open)	I
9	PDI-10 -	Programmable Digital Input (For Single-Ended Signals Leave Negative Terminal Open)	I
10	SGN GND	Signal Ground	SGND
11	SGN GND	Signal Ground	SGND
12	SGN GND	Signal Ground	SGND
13	+5V OUT	+5V Encoder Supply Output (Short Circuit Protected)	0
14	PAI-4 +	Differential Programmable Analog Input (12-bit Resolution)	
15	PAI-4 -		

COMM - RS232/RS485 Communication Connector			
Pin	Name	Description / Notes	1/0
1	SELECT	RS232/485 selection. Pull to ground (CN1-5) for RS485.	I
2	RS232 TX / RS485 TX-	Transmit Line (RS-232 or RS-485)	0
3	RS232 RX / RS485 RX-	Receive Line (RS-232 or RS-485)	I
4	RESERVED	Reserved	-
5	ISO GND	Isolated Signal Ground	IGND
6	RS485 TX+	Transmit Line (RS-485)	0
7	RESERVED	Reserved	-
8	RS485 RX+	Receive Line (RS-485)	I I
9	RESERVED	Reserved	-

	DC BUS / BRAKE RESISTOR - Power Connector			
Pin	Name	Description / Notes	1/0	
1	HIGH VOLTAGE	DC Due Output	0	
2	POWER GND	DC Bus Output	PGND	
3	EXT	External Brake Resistor Connection.	-	
4	4 DC+ Brake Resistor DC+. Connection for brake resistor.		0	
5	INT	Internal Brake Resistor. Jumper to Brake Resistor DC+ to activate.	-	

Pin	Name	Description / Notes	1/0
1	HALL A+		I
2	HALL B+	Commutation Sensor Inputs	I
3	HALL C+		I
4	MOT ENC A+	Differential Encoder A Channel Input (For Single Ended Signals Use Only The Positive	I
5	MOT ENC A-	Input)	1
6	MOT ENC B+	Differential Encoder B Channel Input (For Single Ended Signals Use Only The Positive	I
7	MOT ENC B-	Input)	
8	MOT ENC I+	Differential Form deals and deals and display for the Control of C	
9	MOT ENC I-	Differential Encoder Index Input (For Single Ended Signals Use Only The Positive Input)	1
10	HALL A-	Commutation Sensor Input (For Differential Signals Only)	1
11	HALL B-	Commutation Sensor Input (For Differential Signals Only)	I
12	SGN GND	Signal Ground	SGND
13	+5V OUT	+5V Encoder Supply Output (Short Circuit Protected)	0
14	PAI-3	Programmable Analog Input (12-bit Resolution)	ELECTRON
15	HALL C-	Commutation Sensor Input (For Differential Signals Only)	ee Phone (877) SE



I/O - Signal Connector			
Pin	Name	Description / Notes	1/0
1	PDO-1	Isolated Programmable Digital Output	0
2	OUTPUT COMMON	Digital Output Common	OGND
3	PDO-2	Isolated Programmable Digital Output	0
4	PAI-1 + (REF+)	D''' (1.12	1
5	PAI-1 - (REF-)	Differential Programmable Analog Input or Reference Signal Input (16-bit Resolution)	I
6	PAI-2	Programmable Analog Input (12-bit Resolution)	1
7	SGN GND	Signal Ground	SGND
8	OUTPUT PULL-UP	Digital Output Pull-Up For User Outputs	I
9	PDI-5	Isolated Programmable Digital Input	I
10	PDO-3	Isolated Programmable Digital Output	0
11	PDI-1	Isolated Programmable Digital Input	I
12	PDI-2	Isolated Programmable Digital Input	I
13	PDI-3	Isolated Programmable Digital Input	I
14	PDO-4	Isolated Programmable Digital Output	
15	INPUT COMMON	Digital Input Common (Can Be Used To Pull-Up Digital Inputs)	IGND
16	SGN GND	Signal Ground	SGND
17	PDI-4 (STEP)	Isolated Programmable Digital Input or Step	I
18	PDI-6 (DIR)	Isolated Programmable Digital Input or Direction	I
19	PDI-7 (CAP-A)	Isolated Programmable Digital Input or High Speed Capture	I
20	ENC A+ OUT	Duffered Fareder Observal A Outset	0
21	ENC A- OUT	Buffered Encoder Channel A Output	0
22	ENC B+ OUT	Buffered Encoder Channel B Output	0
23	ENC B- OUT	Buffered Encoder Channel B Output	0
24	ENC I+ OUT	Buffered Encoder Index Output	0
25	ENC I- OUT	Buffered Encoder Index Output	0
26	SGN GND	Signal Ground	SGND

	MOTOR POWER / DC BUS - Power Connector			
Pin	Name	Description / Notes	1/0	
1	MOTOR A	Motor Phase A	0	
2	MOTOR B	Motor Phase B	0	
3	MOTOR C	Motor Phase C	0	
4	POWER GND	Power Ground (Isolated From Signal Ground)	PGND	
5	HIGH VOLTAGE	DC Power Input	I	

	POWER - Power Connector			
Pin	Name	Description / Notes	1/0	
1	L1		I	
2	L2	AC Supply Input (Three Phase)	I	
3	L3		I	
4	PE	Protective Earth Ground	-	
5	RESERVED	Reserved	-	





HARDWARE SETTINGS

Switch Functions

Switch	Description	Setting	
Switch	Description	On	Off
1	Bit 0 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
2	Bit 1 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
3	Bit 2 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
4	Bit 3 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
5	Bit 4 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
6	Bit 5 of binary RS-485 drive address. Does not affect RS-232 settings.	1	0
7	Bit 0 of drive RS-485 baud rate setting. Does not affect RS-232 settings.	1	0
8	Bit 1 of drive RS-485 baud rate setting. Does not affect RS-232 settings.	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.

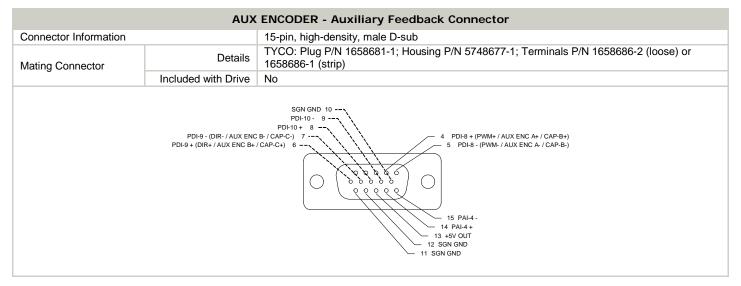
Baud Rate (kbps)	Value For Bit Rate Setting
Load from non-volatile memory	0
9.6	1
38.4	2
115.2	3





MECHANICAL INFORMATION

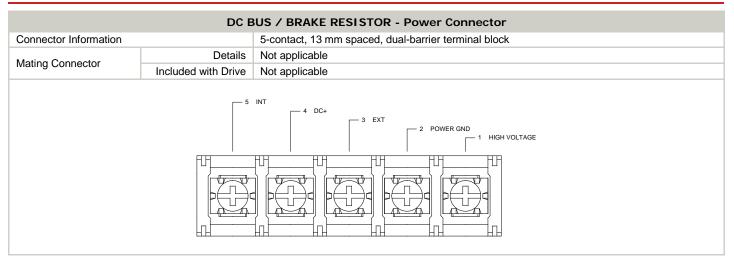
Connector Information		+24V LOGIC - Logic Power Connector 2-port, 5.08 mm spaced, enclosed, friction lock header with threaded flange		
Connector information		2-port, 5.06 min spaced, enclosed, inclion lock header with threaded hange		
Mating Connector	Details	Phoenix Contact: P/N 1777808		
	Included with Drive	Yes		
1 LOGIC GND 2 LOGIC PWR				

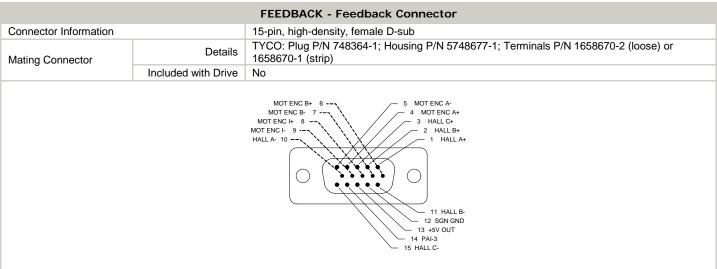


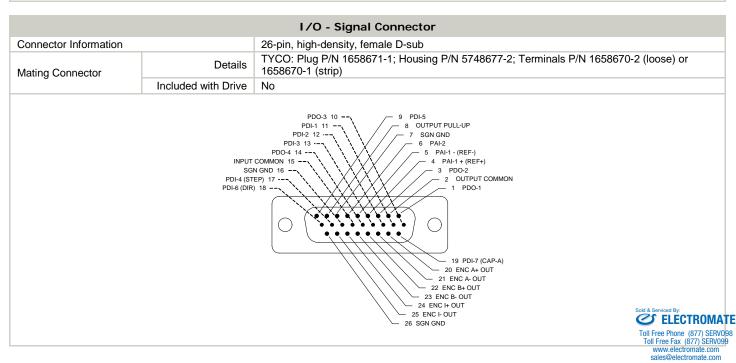
COMM - RS232/RS485 Communication Connector					
Connector Information		9-pin, female D-sub			
Mating Connector	Details	TYCO: Plug P/N 205204-4; Housing P/N 5748677-1; Terminals P/N 1658540-5 (loose) or 1658540-4 (strip)			
	Included with Drive	No			
3 RS232 RX / RS485 RX- 2 RS232 TX / RS485 TX- 1 SELECT 6 RS485 TX+ 8 RS485 RX+					



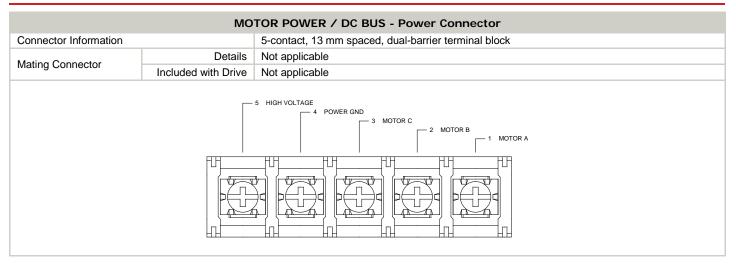










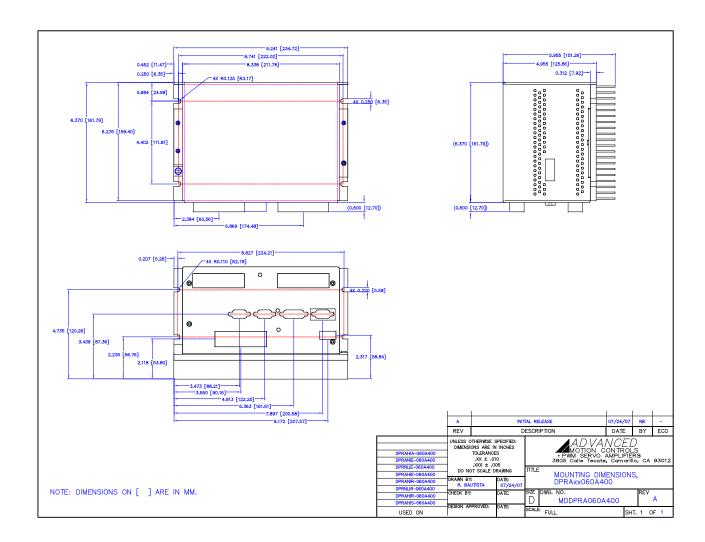


POWER - Power Connector					
Connector Information		5-contact, 13 mm spaced, dual-barrier terminal block			
Mating Connector	Details	Not applicable			
	Included with Drive	Not applicable			
THE TOTAL PE TO A LO TOTAL PE					





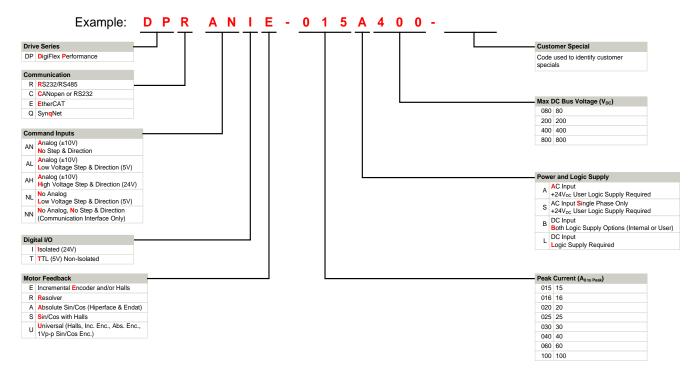
MOUNTING DIMENSIONS







PART NUMBERING INFORMATION



DigiFlex® Performance™ series of products are available in many configurations. Note that not all possible part number combinations are offered as standard drives. All models listed in the selection tables of the website are readily available, standard product offerings.

ADVANCED Motion Controls also has the capability to promptly develop and deliver specified products for OEMs with volume requests. Our Applications and Engineering Departments will work closely with your design team through all stages of development in order to provide the best servo drive solution for your system. Equipped with on-site manufacturing for quick-turn customs capabilities, ADVANCED Motion Controls utilizes our years of engineering and manufacturing expertise to decrease your costs and time-to-market while increasing system quality and reliability. Feel free to contact Applications Engineering for further information and details.

Examples of Customized Products

- Optimized Footprint
- ▲ Private Label Software
- ▲ OEM Specified Connectors
- No Outer Case
- ▲ Increased Current Resolution
- ▲ Increased Temperature Range
- Custom Control Interface
- ✓ Integrated System I/O

- ▲ Tailored Project File
- ▲ Silkscreen Branding
- Optimized Base Plate
- ✓ Increased Current Limits
- ✓ Increased Voltage Range
- Conformal Coating
- Multi-Axis Configurations
- Reduced Profile Size and Weight

Available Accessories

ADVANCED Motion Controls offers a variety of accessories designed to facilitate drive integration into a servo system. Visit www.a-m-c.com to see which accessories will assist with your application design and implementation.





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