Description

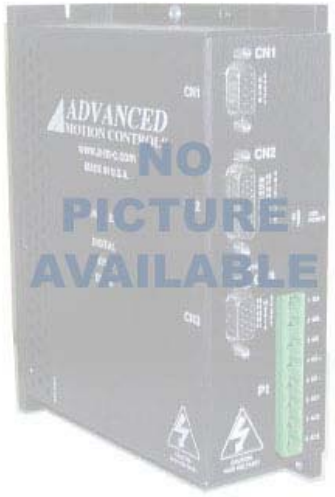
The DigiFlex Performance (DP) Series digital servo drives are designed to drive brushed and brushless servomotors. These fully digital drives operate in torque, velocity, or position mode and employ Space Vector Modulation (SVM), which results in higher bus voltage utilization and reduced heat dissipation compared to traditional PWM. The 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.

This DP Series drive features a CANopen interface for networking and a RS232 interface 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_{RMS})
Continuous Current	12.5 A (8.8 A_{RMS})
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
- Communication Interface

FEEDBACK SUPPORTED
- ±10 V Analog
- Auxiliary Incremental Encoder
- Heidenhain Endat®
- Stegmann Hiperface®

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

This datasheet is incomplete. Contact Advanced Motion Controls for more information.

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	A	25
Maximum Continuous Output Current	A	12.5
Maximum Continuous Output Power	W	2375
Maximum Power Dissipation at Continuous Current	W	118.8
Minimum Load Inductance (Line-To-Line)[1]	µH	250
Switching Frequency	kHz	20
Control Specifications		
Description	Units	Value
Communication Interfaces	-	CANopen (ISO 11898-2), RS-232
Command Sources	-	±10 V Analog, 5V Step & Direction, Communication Interface
Feedback Supported	-	±10 V Analog, Auxiliary Incremental Encoder, Heidenhain Endat®, Stegmann Hiperface®
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
Sin/Cos Encoder DC Offset Range	V	2 - 3.4
Maximum Sin/Cos Encoder Frequency	kHz	200
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.

This datasheet is incomplete. Contact Advanced Motion Controls for more information.

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

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PART NUMBERING INFORMATION

Ex: **D P R A N I E - 0 8 0 A 0 1 5**

Drive Series	
DP	DigiFlex Performance

Communication	
R	RS232/RS485
C	CANopen or RS232
Q	SynqNet

Command Inputs	
AN	Analog (±10V) No Step & Direction
AL	Analog (±10V) Low Voltage Step & Direction (5V)
AH	Analog (±10V) High Voltage Step & Direction (24V)
NL	No Analog Low Voltage Step & Direction (5V)
NN	No Analog, No Step & Direction (Communication Interface Only)

Digital I/O	
I	Isolated (24V)
T	TTL (5V) Non-Isolated

Motor Feedback	
E	Incremental Encoder and/or Halls
R	Resolver
A	Absolute Sin/Cos (Hiperface & Endat)
S	Sin/Cos with Halls

Max DC Bus Voltage (V_{DC})	
080	80
200	200
400	400
800	800

Power and Logic Supply	
A	AC Input +24V_{DC} User Logic Supply Required
N	AC Input Only No Logic Supply Required (Internal Supply)
B	DC Input Both Logic Supply Options (Internal or User)
L	DC Input Logic Supply Required
D	DC Input Only Internal Logic Supply

Peak Current ($A_{0\ to\ Peak}$)	
015	15
016	16
020	20
025	25
030	30
040	40
060	60
100	100

Disclaimer

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

This datasheet is incomplete. Contact Advanced Motion Controls for more information.