

**Description**

The DigiFlex® Performance™ (DP) Series digital servo drives are designed to drive brushed and brushless servomotors, stepper motors, and AC induction motors. 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 CANopen interface for networking and a RS-232 interface for drive configuration and setup. Drive commissioning is accomplished using DriveWare® 7, available for download at [www.a-m-c.com](http://www.a-m-c.com).

All drive and motor parameters are stored in non-volatile memory. The DPC Series Hardware Installation Manual is available for download at [www.a-m-c.com](http://www.a-m-c.com).

**Power Range**

|                    |                               |
|--------------------|-------------------------------|
| Peak Current       | 40 A (28.3 A <sub>RMS</sub> ) |
| Continuous Current | 20 A (20 A <sub>RMS</sub> )   |
| Supply Voltage     | 100 - 240 VAC                 |



**Features**

- ▲ Follows the CAN in Automation (CiA) 301 Communications Profile and 402 Device Profile
- ▲ 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
- ▲ On-the-Fly Mode Switching
- ▲ On-the-Fly Gain Set Switching
- ▲ Dedicated Safe Torque Off (STO) Inputs

**MODES OF OPERATION**

- Profile Modes
- Cyclic Synchronous Modes
- Current
- Velocity
- Position
- Interpolated Position Mode (PVT)

**COMMAND SOURCE**

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

**FEEDBACK SUPPORTED**

- ±10 VDC Position
- Auxiliary Incremental Encoder
- EnDat® 2.1/2.2
- Hiperface®
- 1Vp-p Sine/Cosine Encoder
- Tachometer (±10 VDC)

**INPUTS/OUTPUTS**

- 3 High Speed Captures
- 4 Programmable Analog Inputs (16-bit/12-bit Resolution)
- 1 Programmable Analog Output (10-bit Resolution)
- 3 Programmable Digital Inputs (Differential)
- 7 Programmable Digital Inputs (Single-Ended)
- 4 Programmable Digital Outputs (Single-Ended)

**COMPLIANCES & AGENCY APPROVALS**

- UL
- cUL
- CE Class A (LVD)
- CE Class A (EMC)
- RoHS
- TÜV Rheinland® (STO)

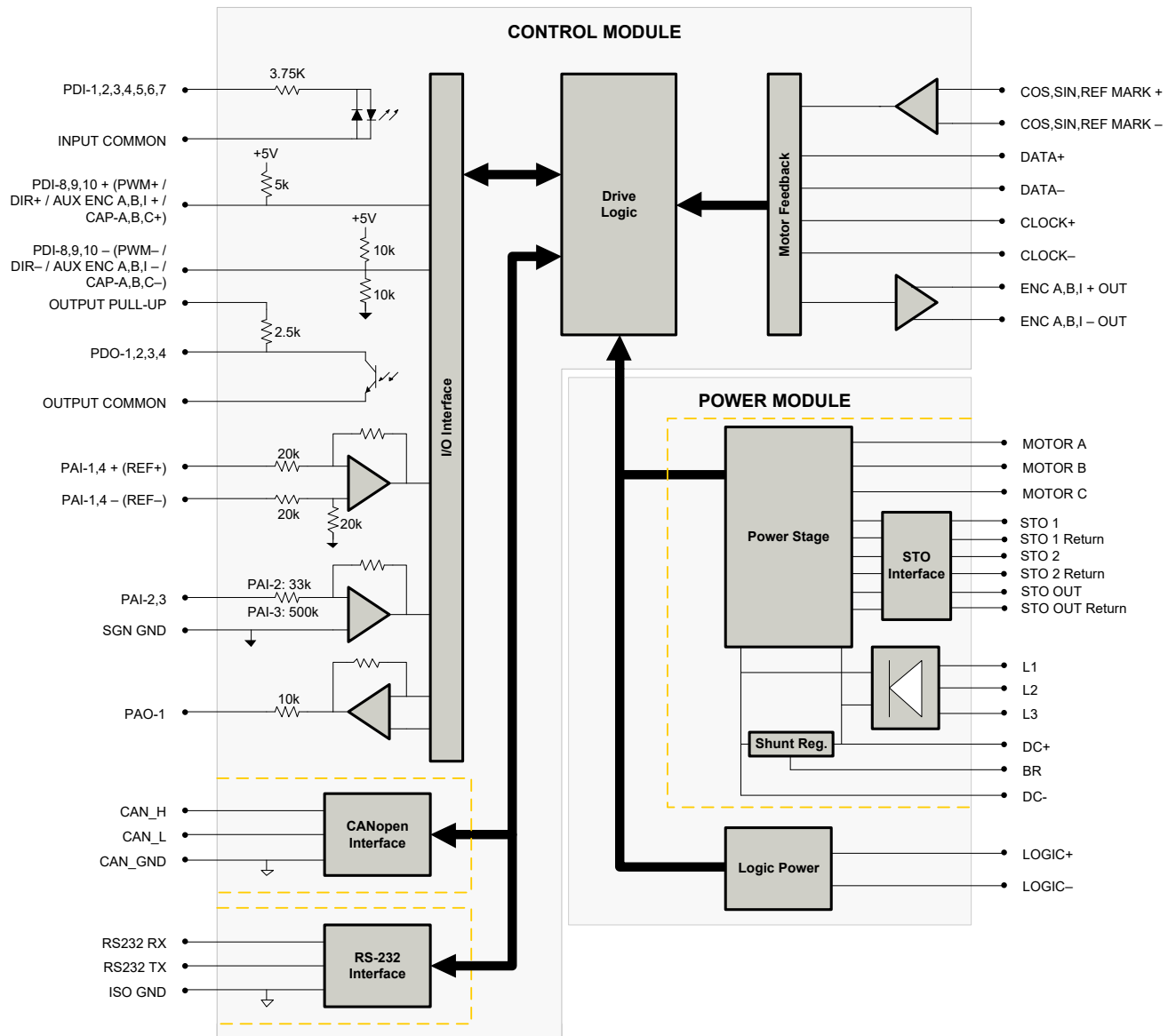
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**BLOCK DIAGRAM**



**Information on Approvals and Compliances**

|  |  |
|--|--|
|   | <p>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.</p>  |
|   | <p>Compliant with European EMC Directive 2014/30/EU on Electromagnetic Compatibility (specifically EN 61000-6-4:2007/A1:2011 for Emissions, Class A and EN 61000-6-2:2005 for Immunity, Performance Criteria A). LVD requirements of Directive 2014/35/EU (specifically, EN 60204-1:2006/A1:2009, a Low Voltage Directive to protect users from electrical shock).</p> |
|   | <p>The RoHS Directive restricts the use of certain substances including lead, mercury, cadmium, hexavalent chromium and halogenated flame retardants PBB and PBDE in electronic equipment.</p>   |
|  <p>Functional Safety Type Approved<br/>www.tuv.com<br/>ID 0500000000</p> | <p>Functional Safety STO is TÜV Rheinland® certified and meets requirements of the following standards:</p> <ul style="list-style-type: none"> <li>• EN ISO 13849-1 Category 4 / PL e</li> <li>• EN IEC 61800-5-2 STO (SIL 3)</li> <li>• EN62061 SIL CL3</li> <li>• IEC 61508 SIL 3</li> </ul>   |

**SPECIFICATIONS**

|   |           | Power Specifications  |  |
|---|-----------|---|--|
| Description   | Units     | Value   |  |
| Rated Voltage   | VAC (VDC) | 240 (339)   |  |
| AC Supply Voltage Range                                   | VAC       | 100 - 240   |  |
| AC Supply Minimum   | VAC       | 90  |  |
| AC Supply Maximum   | VAC       | 264   |  |
| AC Input Phases <sup>1</sup>                              | -         | 3   |  |
| AC Supply Frequency                                       | Hz        | 50 - 60   |  |
| DC Supply Voltage Range <sup>2</sup>                      | VDC       | 127 - 373   |  |
| DC Bus Over Voltage Limit                                 | VDC       | 394   |  |
| DC Bus Under Voltage Limit                                | VDC       | 55  |  |
| Logic Supply Voltage                                      | VDC       | 20 - 30 (@ 850 mA)  |  |
| Safe Torque Off Voltage <sup>3</sup>                      | VDC       | 24 (±6)   |  |
| Maximum Peak Output Current <sup>4</sup>                  | A (Arms)  | 40 (28.3)   |  |
| Maximum Continuous Output Current <sup>5</sup>            | A (Arms)  | 20 (20)   |  |
| Max. Continuous Output Power @ Rated Voltage <sup>6</sup> | W         | 6441  |  |
| Max. Continuous Power Dissipation @ Rated Voltage         | W         | 339   |  |
| Internal Bus Capacitance                                  | µF        | 660   |  |
| External Shunt Resistor Minimum Resistance                | Ω         | 25  |  |
| Minimum Load Inductance (Line-To-Line) <sup>7</sup>       | µH        | 600   |  |
| Switching Frequency                                       | kHz       | 20  |  |
| Maximum Output PWM Duty Cycle                             | %         | 100   |  |
| Low Voltage Supply Outputs                                | -         | +5 VDC (250 mA)   |  |
|   |           | Control Specifications  |  |
| Description   | Units     | Value   |  |
| Communication Interfaces                                  | -         | CANopen (RS-232 for configuration)  |  |
| Command Sources   | -         | ±10 V Analog, Encoder Following, Over the Network, PWM and Direction, Sequencing, Indexing, Jogging   |  |
| Feedback Supported  | -         | ±10 VDC Position, Auxiliary Incremental Encoder, EnDat® 2.1/2.2, Hiperface®, 1Vp-p Sine/Cosine Encoder, Tachometer (±10 VDC)                                    |  |
| Commutation Methods                                       | -         | Sinusoidal  |  |
| Modes of Operation  | -         | Profile Modes, Cyclic Synchronous Modes, Current, Velocity, Position, Interpolated Position Mode (PVT)  |  |
| Motors Supported <sup>8</sup>                             | -         | Three Phase (Brushless Servo), Single Phase (Brushed Servo, Voice Coil, Inductive Load), Stepper (2- or 3-Phase Closed Loop), AC Induction (Closed Loop Vector) |  |
| 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   |  |
| 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 Sin/Cos Encoder Frequency                         | kHz       | 200   |  |
| Maximum Sin/Cos Interpolation                             | -         | 2048 counts per sin/cos cycle   |  |
| Internal Shunt Regulator                                  | -         | Yes   |  |
|   |           | Mechanical Specifications   |  |
| Description   | Units     | Value   |  |
| Agency Approvals  | -         | CE Class A (EMC), CE Class A (LVD), cUL, RoHS, TÜV Rheinland® (STO), UL   |  |
| Size (H x W x D)  | mm (in)   | 177.5 x 133.5 x 49.2 (6.99 x 5.26 x 1.94)   |  |
| Weight  | g (oz)    | 1720 (60.7)   |  |
| Heatsink (Base) Temperature Range <sup>9</sup>            | °C (°F)   | 0 - 75 (32 - 167)   |  |
| Storage Temperature Range                                 | °C (°F)   | -40 - 85 (-40 - 185)  |  |
| Form Factor   | -         | Panel Mount   |  |
| Cooling System  | -         | Natural Convection  |  |
| +24V LOGIC Connector                                      | -         | 2-port, 3.5 mm spaced insert connector  |  |
| AUX COMM Connector  | -         | 3-pin, 2.5 mm spaced, enclosed, friction lock header  |  |
| AUX ENCODER Connector                                     | -         | 15-pin, high-density, male D-sub  |  |
| COMM Connector  | -         | Shielded, dual RJ-45 socket with LEDs   |  |
| FEEDBACK Connector  | -         | 15-pin, high-density, female D-sub  |  |
| I/O Connector   | -         | 26-pin, high-density, female D-sub  |  |
| AC POWER Connector  | -         | 4-port, 5.0 mm spaced, push-in front spring connection header   |  |
| DC POWER Connector  | -         | 5-port, 5.0 mm spaced, push-in front spring connection header   |  |
| MOTOR POWER Connector                                     | -         | 4-port, 5.0 mm spaced, push-in front spring connection header   |  |
| STO Connector   | -         | 8-port, 2.0 mm spaced, enclosed, friction lock header   |  |

- 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. See installation manual for details.
- STO features must be disabled for applications not using STO. See page 6 for more information.
- Capable of supplying drive rated peak current for 2 seconds with 10 second foldback to continuous value. Longer times are possible with lower current limits.
- Continuous  $A_{rms}$  value attainable when RMS Charge-Based Limiting is used.
- $P = (DC \text{ Rated Voltage}) * (Cont. RMS Current) * 0.95$ .
- Lower inductance is acceptable for bus voltages well below maximum. Use external inductance to meet requirements.
- Maximum motor speed for stepper motors is 600 RPM. Consult the hardware installation manual for 2-phase stepper wiring configuration.
- Additional cooling and/or heatsink may be required to achieve rated performance.

**PIN FUNCTIONS**

| <b>+24V LOGIC - Logic Power Connector</b> |           |                     |     |
|---|-----------|---------------------|-----|
| Pin                                       | Name      | Description / Notes | I/O |
| 1   | LOGIC GND | Logic Supply Ground | GND |
| 2   | LOGIC PWR | Logic Supply Input  | I   |

| <b>AUX COMM - RS232 Communication Connector</b> |          |                        |      |
|---|----------|------------------------|------|
| Pin   | Name     | Description / Notes    | I/O  |
| 1   | RS232 RX | Receive Line (RS-232)  | I    |
| 2   | RS232 TX | Transmit Line (RS-232) | O    |
| 3   | ISO GND  | Isolated Signal Ground | IGND |

| <b>AUX ENCODER - Auxiliary Feedback Connector</b> |                                      |  |      |
|---|--------------------------------------|--|------|
| Pin   | Name                                 | Description / Notes  | I/O  |
| 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 Single-Ended Signals Leave Negative Terminal Open)             | I    |
| 5   | PDI-8 - (PWM- / AUX ENC A- / CAP-B-) | Programmable Digital Input or PWM or Auxiliary Encoder or High Speed Capture (For Single-Ended Signals Leave Negative Terminal Open)             | I    |
| 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) | I    |
| 7   | 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) | I    |
| 8   | PDI-10 + (AUX ENC I+ / CAP-A+)       | Programmable Digital Input or Auxiliary Encoder or High Speed Capture (For Single-Ended Signals Leave Negative Terminal Open)                    | I    |
| 9   | PDI-10 - (AUX ENC I- / CAP-A-)       | Programmable Digital Input or Auxiliary Encoder or High Speed Capture (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)  | O    |
| 14  | PAI-4 +                              | Differential Programmable Analog Input (12-bit Resolution)   | I    |
| 15  | PAI-4 -                              | Differential Programmable Analog Input (12-bit Resolution)   | I    |

| <b>COMM - CAN Communication Connector</b> |          |                            |      |
|---|----------|----------------------------|------|
| Pin                                       | Name     | Description / Notes        | I/O  |
| 1   | CAN_H    | CAN_H Line (Dominant High) | I    |
| 2   | CAN_L    | CAN_L Line (Dominant Low)  | I    |
| 3   | CAN_GND  | CAN Ground                 | CGND |
| 4   | RESERVED | Reserved                   | -    |
| 5   | RESERVED | Reserved                   | -    |
| 6   | RESERVED | Reserved                   | -    |
| 7   | CAN_GND  | CAN Ground                 | CGND |
| 8   | RESERVED | Reserved                   | -    |

| <b>FEEDBACK - Feedback Connector</b> |            |  |      |
|--------------------------------------|------------|--|------|
| Pin                                  | Name       | Description / Notes  | I/O  |
| 1                                    | COS +      | Cosine Input   | I    |
| 2                                    | COS -      | Cosine Input   | I    |
| 3                                    | SIN +      | Sine Input   | I    |
| 4                                    | SIN -      | Sine Input   | I    |
| 5                                    | SGN GND    | Signal Ground  | SGND |
| 6                                    | DATA-      | Differential Data Line (Differential Hall A if using 1Vp-p Sine/Cosine encoder. Pin 6 = Hall A+, Pin 7 = Hall A-. For single-ended Halls leave negative terminal open.)  | I/O  |
| 7                                    | DATA+      | Differential Data Line (Differential Hall A if using 1Vp-p Sine/Cosine encoder. Pin 6 = Hall A+, Pin 7 = Hall A-. For single-ended Halls leave negative terminal open.)  | I/O  |
| 8                                    | CLOCK+     | Differential Clock Line (Differential Hall B if using 1Vp-p Sine/Cosine encoder. Pin 8 = Hall B+, Pin 9 = Hall B-. For single-ended Halls leave negative terminal open.) | O    |
| 9                                    | CLOCK-     | Differential Clock Line (Differential Hall B if using 1Vp-p Sine/Cosine encoder. Pin 8 = Hall B+, Pin 9 = Hall B-. For single-ended Halls leave negative terminal open.) | O    |
| 10                                   | REF MARK + | Reference mark from sine/cosine encoder  | I    |
| 11                                   | RESERVED   | Reserved (Differential Hall C if using 1Vp-p Sine/Cosine encoder. Pin 11 = Hall C+, Pin 12 = Hall C-. For single-ended Halls leave negative terminal open.)              | -    |
| 12                                   | RESERVED   | Reserved (Differential Hall C if using 1Vp-p Sine/Cosine encoder. Pin 11 = Hall C+, Pin 12 = Hall C-. For single-ended Halls leave negative terminal open.)              | -    |
| 13                                   | +5V OUT    | +5V Encoder Supply Output (Short Circuit Protected)  | O    |
| 14                                   | PAI-3      | Programmable Analog Input (12-bit Resolution)  | I    |
| 15                                   | REF MARK - | Reference mark from sine/cosine encoder  | I    |

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| <b>I/O - Signal Connector</b> |                |  |      |
|-------------------------------|----------------|--|------|
| Pin                           | Name           | Description / Notes  | I/O  |
| 1                             | PDO-1          | Isolated Programmable Digital Output   | O    |
| 2                             | OUTPUT COMMON  | Digital Output Common  | OGND |
| 3                             | PDO-2          | Isolated Programmable Digital Output   | O    |
| 4                             | PAI-1 + (REF+) | Differential Programmable Analog Input or Reference Signal Input (16-bit Resolution) | I    |
| 5                             | PAI-1 - (REF-) |  | I    |
| 6                             | PAI-2          | Programmable Analog Input (12-bit Resolution)  | I    |
| 7                             | PAO-1          | Programmable Analog Output (10-bit Resolution)                                       | O    |
| 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   | O    |
| 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   | O    |
| 15                            | INPUT COMMON   | Digital Input Common (Can Be Used To Pull-Up Digital Inputs)                         | IGND |
| 16                            | SGN GND        | Signal Ground  | SGND |
| 17                            | PDI-4          | Isolated Programmable Digital Input  | I    |
| 18                            | PDI-6          | Isolated Programmable Digital Input  | I    |
| 19                            | PDI-7          | Isolated Programmable Digital Input  | I    |
| 20                            | ENC A+ OUT     | Emulated Encoder Channel A Output  | O    |
| 21                            | ENC A- OUT     |  | O    |
| 22                            | ENC B+ OUT     | Emulated Encoder Channel B Output  | O    |
| 23                            | ENC B- OUT     |  | O    |
| 24                            | ENC I+ OUT     | Emulated Encoder Index Output  | O    |
| 25                            | ENC I- OUT     |  | O    |
| 26                            | SGN GND        | Signal Ground  | SGND |

| <b>Motor Power Connector</b> |         |                     |      |
|------------------------------|---------|---------------------|------|
| Pin                          | Name    | Description / Notes | I/O  |
| 1                            | CHASSIS | Chassis Ground      | CGND |
| 2                            | MOTOR A | Motor Phase A       | O    |
| 3                            | MOTOR B | Motor Phase B       | O    |
| 4                            | MOTOR C | Motor Phase C       | O    |

| <b>AC Power Connector</b> |         |  |      |
|---------------------------|---------|--|------|
| Pin                       | Name    | Description / Notes  | I/O  |
| 1                         | L1      | AC Supply Input (Three Phase). External 20 A time delay fuses are recommended in series with the AC input lines. | I    |
| 2                         | L2      |  | I    |
| 3                         | L3      |  | I    |
| 4                         | CHASSIS | Chassis Ground   | CGND |

| <b>DC Power Connector</b> |      |  |      |
|---------------------------|------|--|------|
| Pin                       | Name | Description / Notes  | I/O  |
| 1                         | DC-  | Power Ground   | PGND |
| 2                         | NC   | No Connect   | -    |
| 3                         | DC+  | DC Power Input   | I    |
| 4                         | DC+  | External Shunt Resistor Connection. Connect resistor between DC+ and BR. | -    |
| 5                         | BR   |  | -    |

| <b>STO – Safe Torque Off Connector*</b> |                |                               |         |
|---|----------------|-------------------------------|---------|
| Pin                                     | Name           | Description / Notes           | I/O     |
| 1                                       | STO OUTPUT     | Safe Torque Off Output        | O       |
| 2                                       | RESERVED       | Reserved                      | -       |
| 3                                       | STO-1 RETURN   | Safe Torque Off 1 Return      | STORET1 |
| 4                                       | STO-1          | Safe Torque Off – Input 1     | I       |
| 5                                       | STO-2 RETURN   | Safe Torque Off 2 Return      | STORET2 |
| 6                                       | STO-2          | Safe Torque Off – Input 2     | I       |
| 7                                       | RESERVED       | Reserved                      | -       |
| 8                                       | STO OUT RETURN | Safe Torque Off Output Return | STORETO |

\*STO features must be disabled for applications not using STO. See page 6 for more information.

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## HARDWARE SETTINGS

### Switch Functions

| Switch | Description   | Setting |     |
|--------|---|---------|-----|
|        |   | On      | Off |
| 1      | Bit 0 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 2      | Bit 1 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 3      | Bit 2 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 4      | Bit 3 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 5      | Bit 4 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 6      | Bit 5 of binary CANopen node ID. Does not affect RS-232 settings.         | 1       | 0   |
| 7      | Bit 0 of drive CANopen bit rate setting. Does not affect RS-232 settings. | 1       | 0   |
| 8      | Bit 1 of drive CANopen bit 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. Note that higher bit rates are possible when using the value stored in NVM.

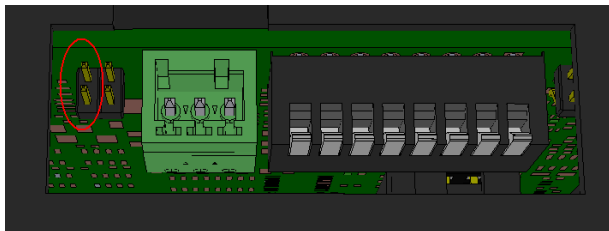
| Bit Rate (kbits/sec)          | Value For Bit Rate Setting |
|-------------------------------|----------------------------|
| Load from non-volatile memory | 0                          |
| 500                           | 1                          |
| 250                           | 2                          |
| 125                           | 3                          |

### Safe Torque Off (STO) Inputs

The Safe Torque Off (STO) Inputs are dedicated +24VDC max sinking single-ended inputs. For applications not using STO functionality, disabling of the STO feature is required for proper drive operation. STO may be disabled by installing the included mating connector for the STO connector and following the STO Disable wiring instructions as given in the hardware installation manual. Consult the hardware installation manual for more information. Alternatively, a dedicated STO Disable Key connector is available for purchase for applications where STO is not in use. Contact the factory for ordering information.

### CAN Termination Jumper Configuration

| Jumper | Description  | Configuration        |                  |          |
|--------|--|----------------------|------------------|----------|
|        |  | Not Installed        | Pins 1-2         | Pins 3-4 |
| J1     | CAN bus termination. For the last drive in a CAN network, a jumper (2.54mm) must be installed on the 4-pin header adjacent to the RS-232 connector. The jumper should be installed between pins 1 and 2, which are the two pins furthest from the connector (see graphic below). | Non-terminating Node | Terminating Node | N/A      |



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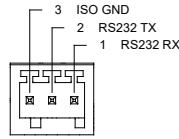
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**MECHANICAL INFORMATION**

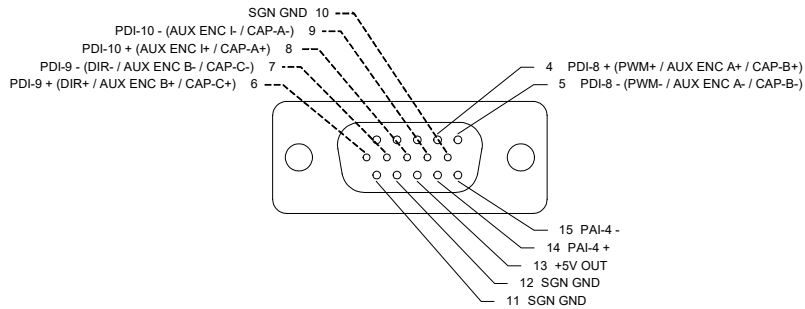
**AUX COMM - RS232 Communication Connector**

|                       |  |                           |
|-----------------------|--|---------------------------|
| Connector Information | 3-pin, 2.5 mm spaced, enclosed, friction lock header |                           |
| Mating Connector      | Details  | Phoenix: Plug P/N 1881338 |
|                       | Included with Drive                                  | Yes                       |



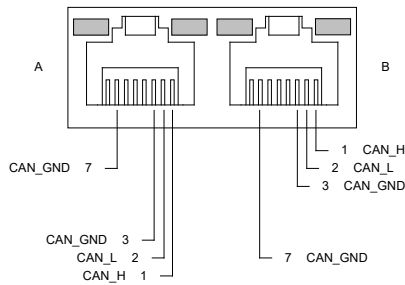
**AUX ENCODER - Auxiliary Feedback Connector**

|                       |                                  |   |
|-----------------------|----------------------------------|---|
| Connector Information | 15-pin, high-density, male D-sub |   |
| Mating Connector      | Details                          | TYCO: Plug P/N 1658681-1; Housing P/N 5748677-1; Terminals P/N 1658686-2 (loose) or 1658686-1 (strip) |
|                       | Included with Drive              | No  |



**COMM - CAN Communication Connector**

|                       |                                       |                          |
|-----------------------|---------------------------------------|--------------------------|
| Connector Information | Shielded, dual RJ-45 socket with LEDs |                          |
| Mating Connector      | Details                               | AMP: Plug P/N 5-569552-3 |
|                       | Included with Drive                   | No                       |



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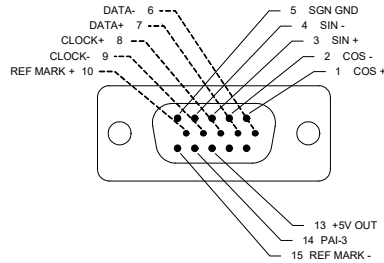
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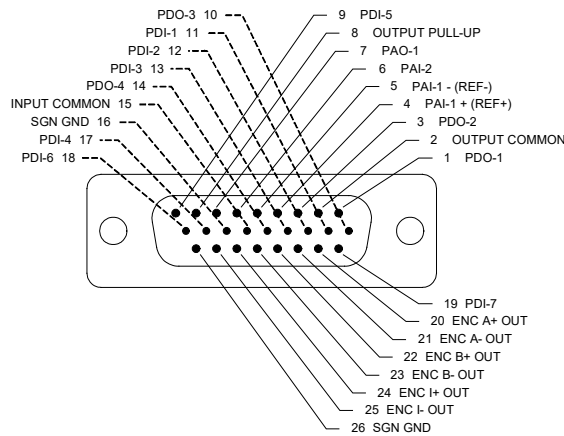
**FEEDBACK - Feedback Connector**

|                       |                     |  |
|-----------------------|---------------------|--|
| Connector Information |                     | 15-pin, high-density, female D-sub   |
| Mating Connector      | Details             | TYCO: Plug P/N 748364-1; Housing P/N 5748677-1; Terminals P/N 1658670-2 (loose) or 1658670-1 (strip) |
|                       | Included with Drive | No   |



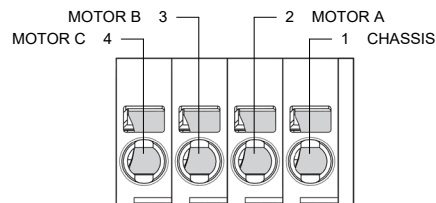
**I/O - Signal Connector**

|                       |                     |   |
|-----------------------|---------------------|---|
| Connector Information |                     | 26-pin, high-density, female D-sub  |
| Mating Connector      | Details             | TYCO: Plug P/N 1658671-1; Housing P/N 5748677-2; Terminals P/N 1658670-2 (loose) or 1658670-1 (strip) |
|                       | Included with Drive | No  |



**Motor Power Connector**

|                       |                     |   |
|-----------------------|---------------------|---|
| Connector Information |                     | 4-port, 5.0 mm spaced, push-in front spring connection header                           |
| Mating Connector      | Details             | Push-in direct plug-in method for solid or stranded conductors with or without ferrules |
|                       | Included with Drive | Not Applicable  |



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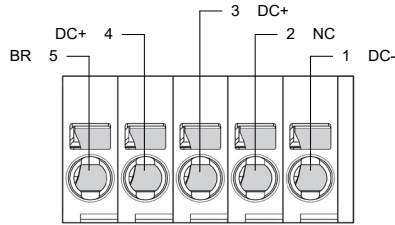
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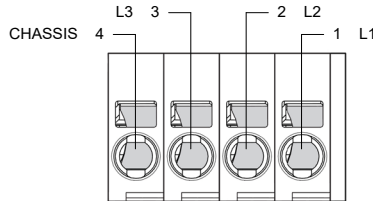
**DC Power Connector**

|                       |   |   |
|-----------------------|---|---|
| Connector Information | 5-port, 5.0 mm spaced, push-in front spring connection header |   |
| Mating Connector      | Details   | Push-in direct plug-in method for solid or stranded conductors with or without ferrules |
|                       | Included with Drive   | Not Applicable  |



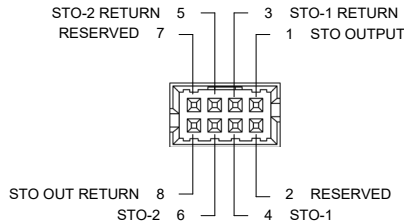
**AC Power Connector**

|                       |   |   |
|-----------------------|---|---|
| Connector Information | 4-port, 5.0 mm spaced, push-in front spring connection header |   |
| Mating Connector      | Details   | Push-in direct plug-in method for solid or stranded conductors with or without ferrules |
|                       | Included with Drive   | Not Applicable  |



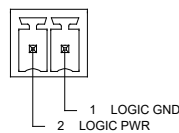
**STO – Safe Torque Off Connector**

|                       |  |  |
|-----------------------|--|--|
| Connector Information | 8-port, 2.00 mm spaced, enclosed, friction lock header |  |
| Mating Connector      | Details  | Molex: P/N 51110-0860 (housing); 50394-8051 (pins) |
|                       | Included with Drive                                    | Yes  |

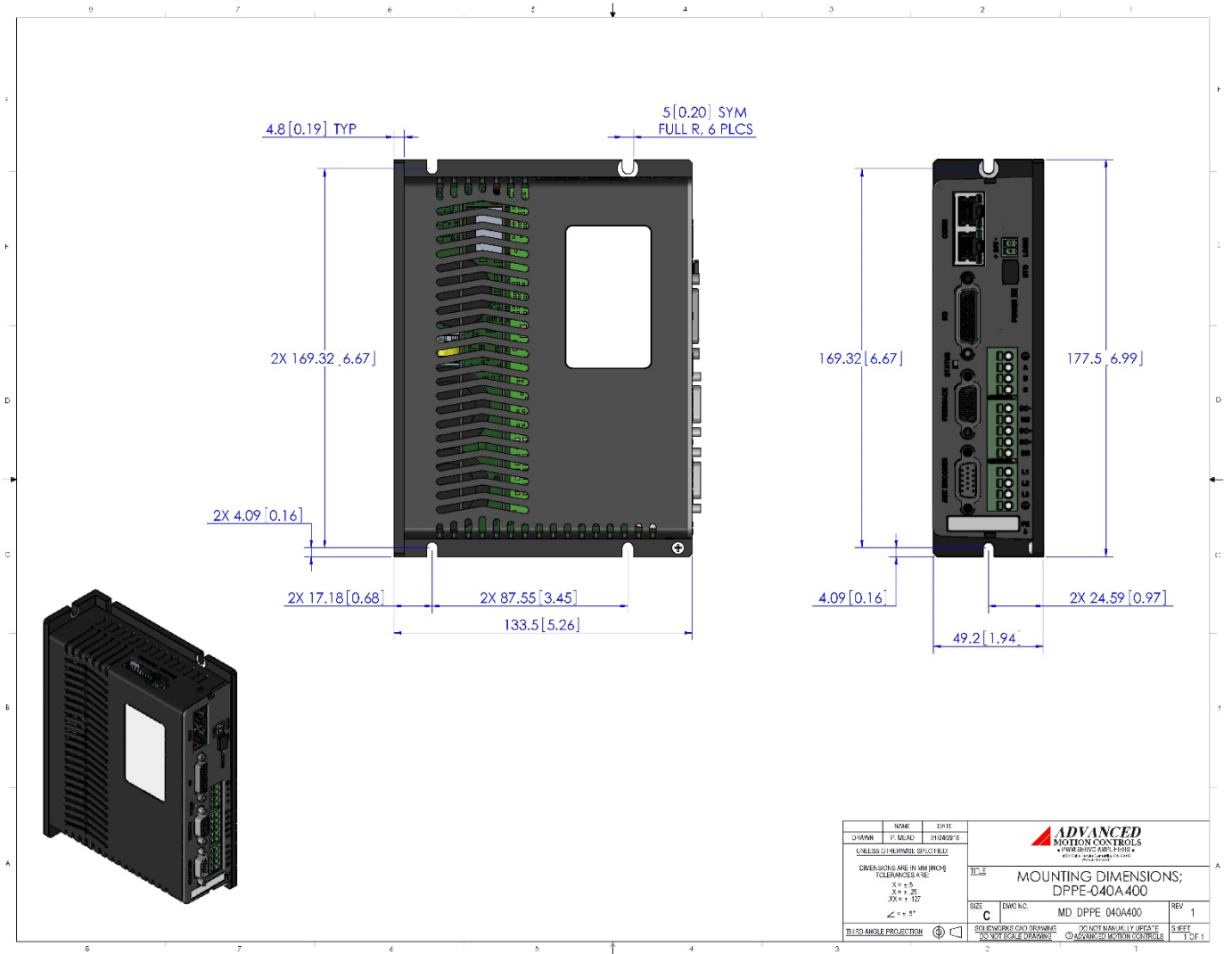


**+24V LOGIC - Logic Power Connector**

|                       |   |                              |
|-----------------------|---|------------------------------|
| Connector Information | 2-port, 3.5 mm spaced, enclosed, friction lock header |                              |
| Mating Connector      | Details   | Phoenix Contact: P/N 1840366 |
|                       | Included with Drive                                   | Yes                          |



**MOUNTING DIMENSIONS**



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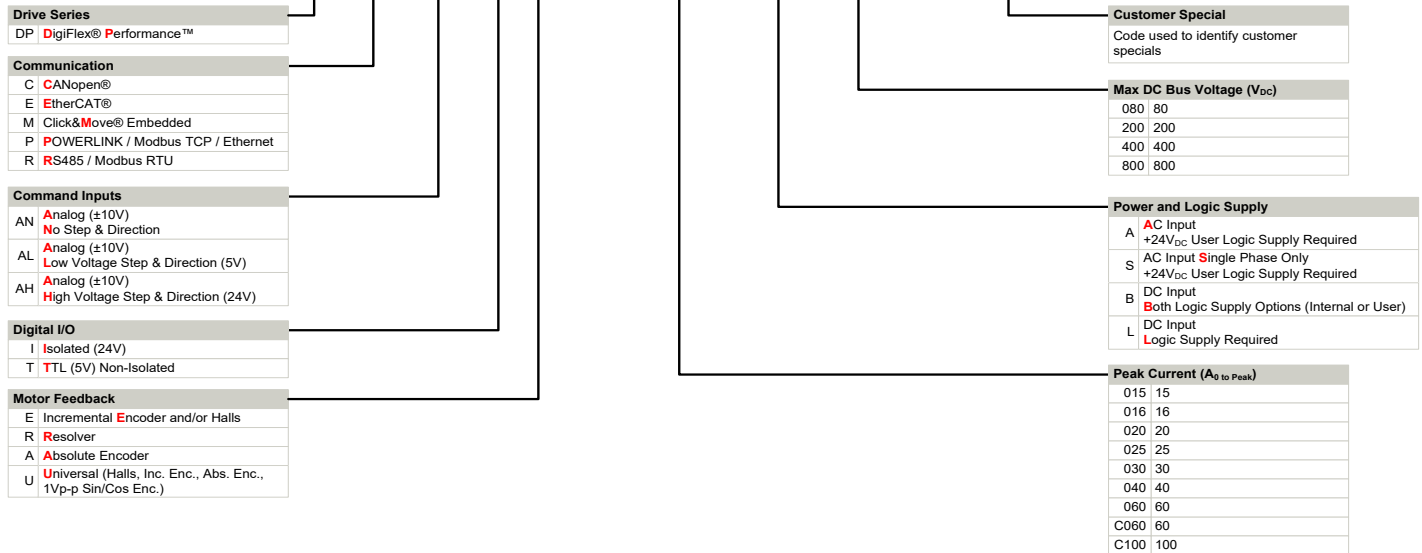
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**PART NUMBERING INFORMATION**

Example: **D P C A N I A - 0 4 0 A 4 0 0 -**



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](http://www.a-m-c.com) to see which accessories will assist with your application design and implementation.



➔  
**To Motor**

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