ARCUS Technology

Innovations in Motion

MOTION PRODUCT CATALOG

RCC INDUSTRIAL SOLUTIONS

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Arcus Technology, a motion control company headquartered in California, USA, is a global supplier of stepper motion control products founded on the principle that innovative motion control solutions can be simple and affordable to our customers.

To fulfill your various communication needs, we provide a wide range of motion products with USB 2.0, RS-232, RS-485, Ethernet and CAN communications interfaces.

Arcus products are designed to ease your programming and usage requirements. An extensive range of programs and source code are available to help you get started immediately and maintain the product easily.

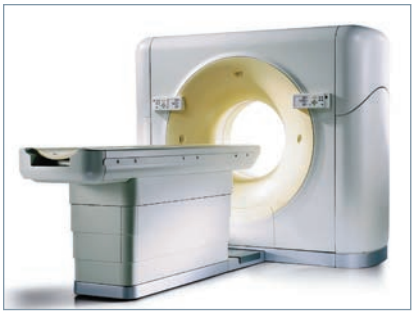
We provide integrated stepper motor/driver/controller solutions to ease your wiring and connection efforts. By utilizing innovative technology, streamlined manufacturing, and efficient sourcing methods, we reduce the cost and pass on the savings to our customers.

Arcus Technology strives to help you succeed in motion control applications.

Our mission is to develop and introduce innovative, user-friendly, and cost-effective products to the motion control industry. Our success is measured by the success of our customers, vendors, partners, and Arcus family members.

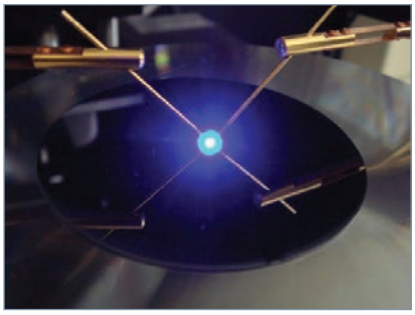
CAT Scan (Biomedical)

DMX-K-DRV-23



Wafer Processing (Semiconductor)

ACE-SXE



Pattern Design Machine (Textile)

PMX-2EX-SA
DMX-K-DRV-23
DMX-J-SA

Antenna Positioning (Military)

DMX-K-SA-11

Other Applications

Vending Machine (Entertainment)
PMX-2EX-SA (OEM)

PCB Processing Equipment (Assembly)
PMX-4CX-SA
DMX-K-DRV-23

3-D Camera (Image Processing)
PMX-4EX-SA
DMX-A2-DRV

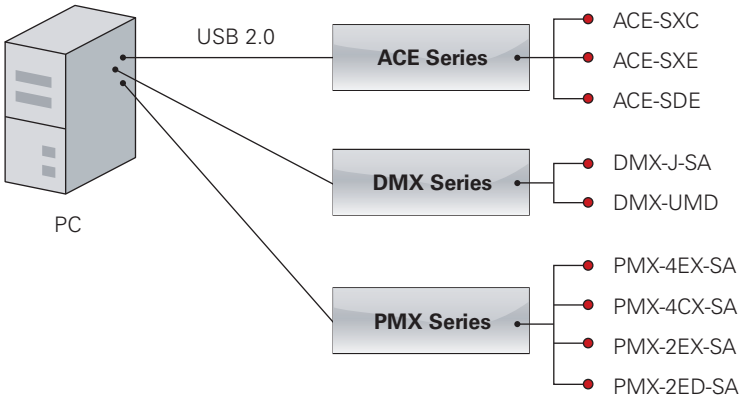
Test Strip Analyzer (Biomedical)
DMX-J-SA-17

Surveillance Camera (Security)
DMX-K-SA-17

Depth Scale (Test Equipment)
PMX-2ED-SA
DMX-J-SA

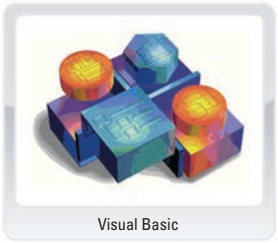
USB 2.0 PC Based Motion Control

Arcus Technology offers a full line of USB 2.0 based motion controllers from single to multi axis controllers. Using the Plug&Play advantage of USB communication, making a PC based motion control system has never been easier.



Arcus Technology also provides sample source codes in various programming platforms for PC based control (C++, VB, LabView, .NET, etc.).


Visual C++

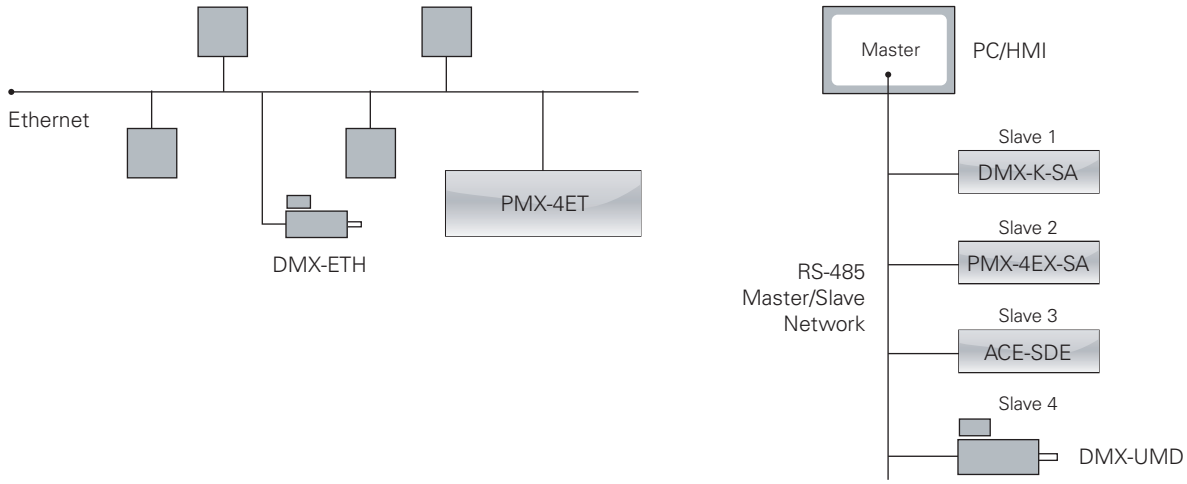

Visual Basic


LabView

Microsoft .NET

Network Communication Motion Control

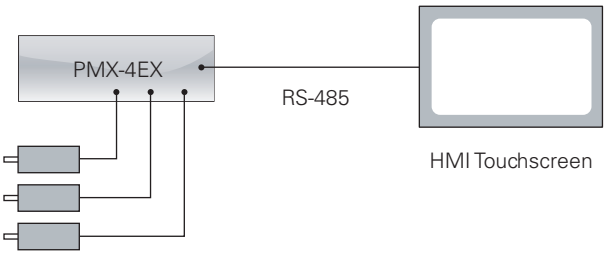
Arcus controllers are offered with Ethernet and RS-485 network communications. With these network capabilities, motion system is expandable and modular.



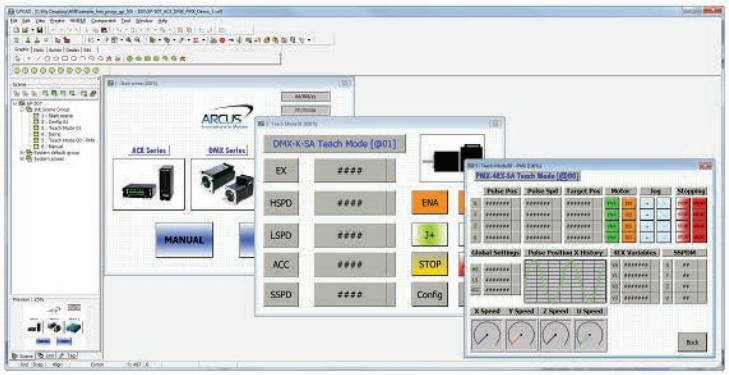
Touchscreen Human Machine Interface

Arcus controllers support Touchscreen HMI through RS-485 communication. Making a graphical user motion interface is simple with an easy to use Windows HMI programming environment.

XYZ Standalone System with Touchscreen HMI

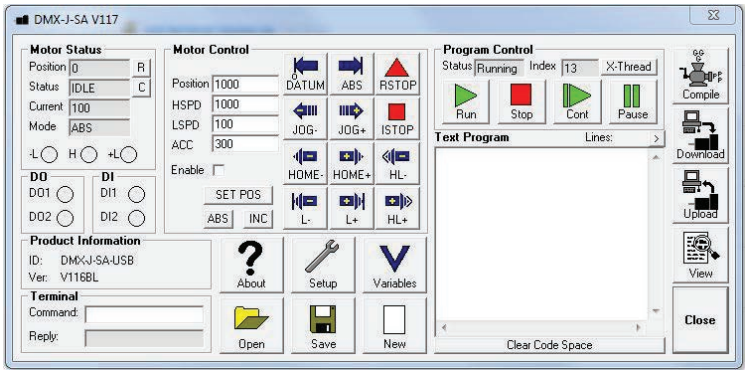


HMI Programming Environment



Programming Language and Environment

All Arcus motion controllers support BASIC-like programming language which is easy to use and maintain. Each Arcus controller comes with a Windows program for quick and easy programming and debugging of any motion application.



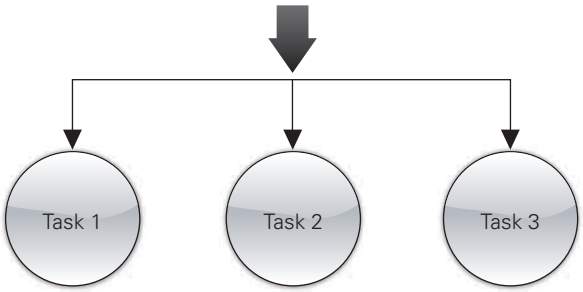
Example Program

```
HSPD=2000           ;***Set high speed
LSPD=100            ;***Set low speed
ACC=300             ;***Set acceleration
WHILE 1=1                    ;***WHILE Loop
   IF DI1=1         ;***IF conditional
      X2000Y3000
      WAITX
      GOSUB         ;***Jump to subroutine
   ELSEIF DI2=1     ;***ELSEIF conditional
      DO=12
      Z3000
   ENDIF
ENDWHILE
END                 ;***End program
```

Multi-tasking Language

Arcus controllers support multi-tasking within the stand-alone program execution. Multi-tasking allows you to perform multiple operations concurrently. These operations include, but are not limited to: moving axes, updating variables and sampling digital/analog data. Any program task can be started or stopped within the stand-alone code itself. Multi-tasking capability provides extra flexibility in the timing and execution of your desired operations.

Start Program

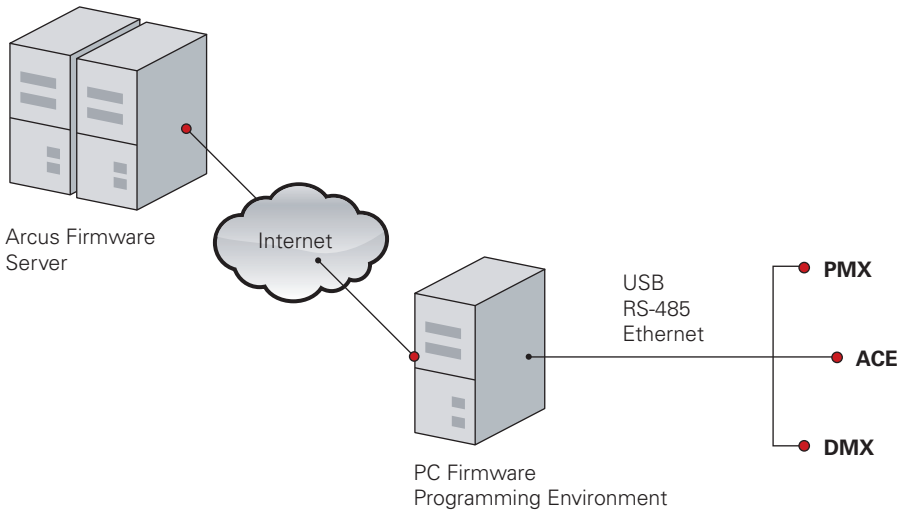


Example Program

```
;*************Task 1*****************
PRG 1
WHILE 1=1
  X8000
  WAITX
  X0
ENDWHILE
END
;*************Task 2*****************
PRG 2
WHILE 1=1
  Y2000
  Y0
ENDWHILE
END
;*************Task 3*****************
PRG 3
WHILE 1=1
  DO1=1
  DELAY=500
  DO1=0
  DELAY=500
ENDWHILE
END
```

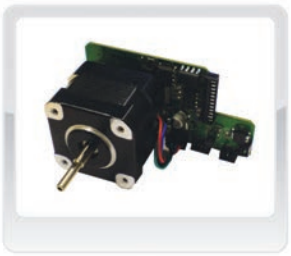
Easy Firmware Upgrade

All Arcus controller products are available with field-upgradable firmware capability, which saves you time and cost. Upgrading is a simple and quick process which can be done at the customer's site. Simply download the latest firmware from the Arcus website and, using a PC with the same communication port (USB, RS-485, Ethernet), download the latest firmware to the Arcus controller.



Customization Service

In addition to providing standard motion products, our team of engineers is ready to meet your specific motion needs through customized engineering services. Contact us for your next custom motion control project.



PMX Series: Multi-Axis Controllers

PMX-4EX-SA
Advanced 4-Axis Motion Controller with USB/RS-485 Communication

PMX-4ET-SA
Advanced 4-Axis Motion Controller with Ethernet Communication

PMX-4CX-SA
Basic 4-Axis Motion Controller with USB/RS-485 Communication

PMX-2EX-SA
Advanced 2-Axis Motion Controller with USB/RS-485 Communication

PMX-2ED-SA
Advanced 2-Axis Motion Controller/Driver with USB/RS-485 Communication

ACE Series: Single-Axis Driver/Controllers

ACE-SDE
Advanced Single Axis Motion Controller/ Driver with USB/RS-485 Communication

ACE-SXE
Advanced Single Axis Motion Controller with USB/RS-485 Communication

ACE-SXC
Basic Single Axis Motion Controller with USB Communication

ACE-SDX
Advanced Single Axis Motion Microstep Driver

DMX Series: Integrated Motor+Driver+Controller+Encoder

DMX-K-SA
Integrated Motor+Driver+Controller+Encoder with RS-485/RS-232 Communication

DMX-K-SA-11
Integrated NEMA 11 Motor+Driver+ Controller+Encoder with RS-485 Communication

DMX-CAN
Integrated Motor+Driver+Controller+Encoder with CANOpen Communication

DMX-J-SA
Integrated Motor+Driver+Controller with USB Communication

DMX-ETH
Integrated Motor+Driver+Controller+Encoder with Ethernet Communication

DMX-UMD
Integrated Motor+Driver+Controller+Encoder with RS-485/USB Communication

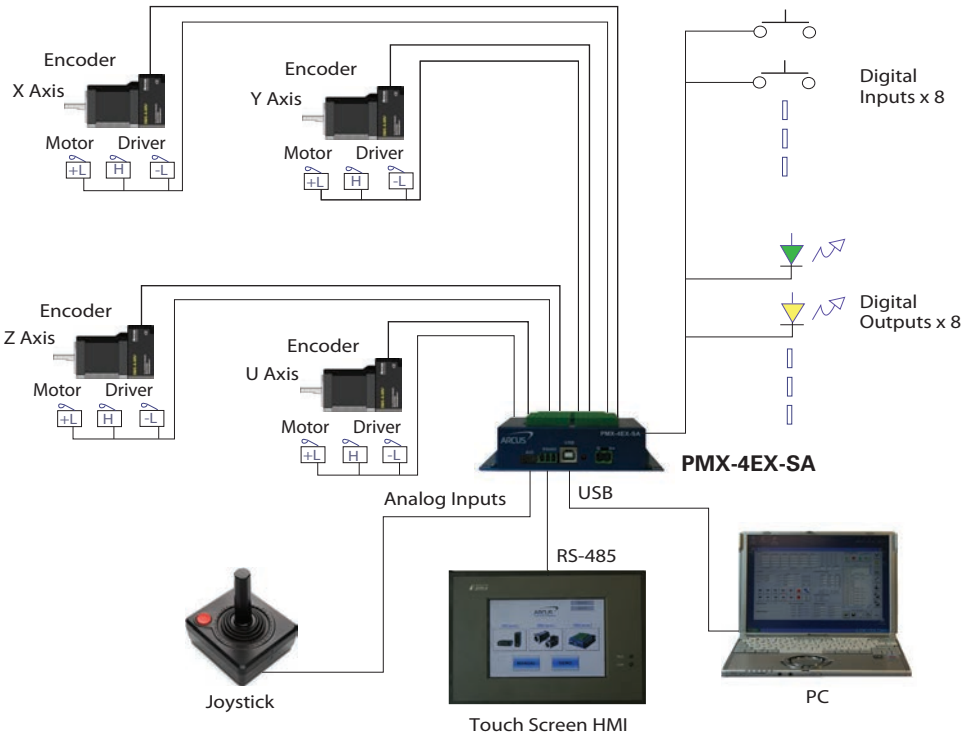
DMX-A2-DRV
Integrated Motor+Driver+(Encoder)

DMX-K-DRV
Integrated Motor+Driver/Controller

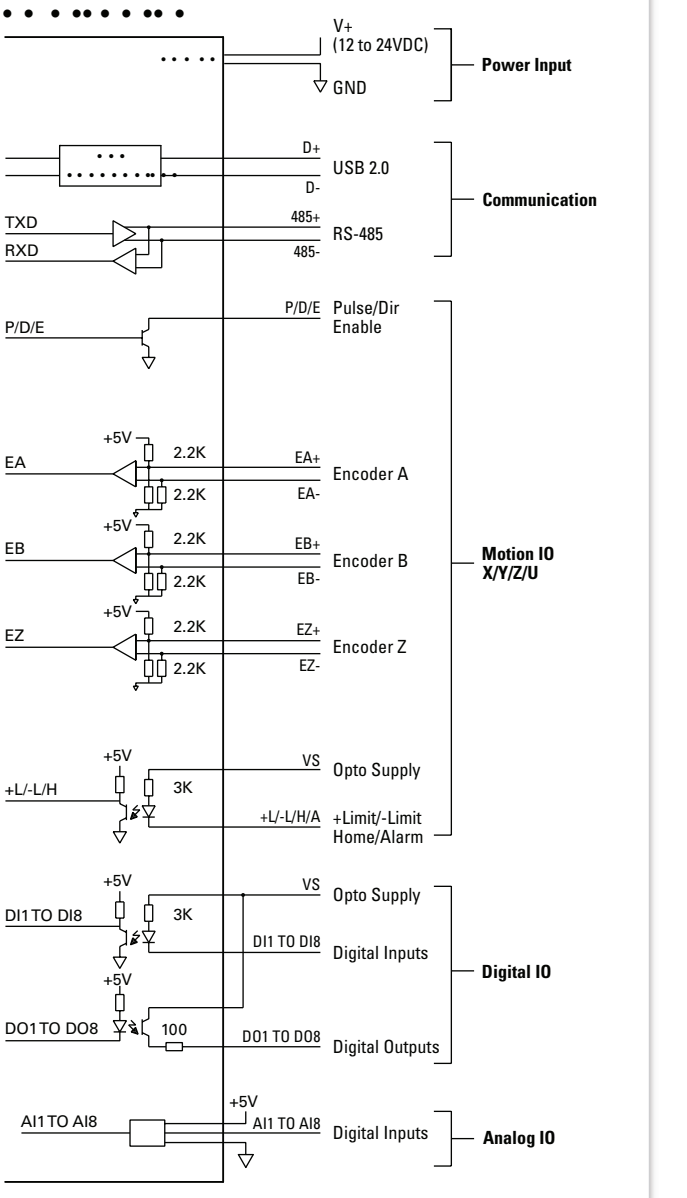
Also available with DB9 Top Junction Board for Easy Connection with DMX-A2-DRV

Specifications

- 4 Axis Advanced Motion Controller
- USB 2.0 and RS-485 Communication
- 6M maximum pulse rate output
- Trapezoidal or s-curve acceleration
- On-the-fly speed change
- Continuous linear coordinated buffered XYZ move
- XYZU linear coordinated motion
- XY circular and arc coordinated motion
- Homing using Home and/or Index encoder channel
- Pulse/Dir/Enable open collector outputs per axis
- Opto-isolated +Limit, -Limit, Home, and Alarm inputs per axis
- Single-ended or differential quadrature encoder inputs per axis
- Opto-isolated Digital Inputs (8)
- Opto-isolated Digital Outputs (8)
- Analog inputs 10-bit resolution (8)
- Built-in joystick control for XYZU axes
- High speed position capture inputs and sync outputs
- Built-in StepNLoop closed loop control algorithm
- BASIC-like standalone programming language
- Multi-task programming support



Electrical Interface



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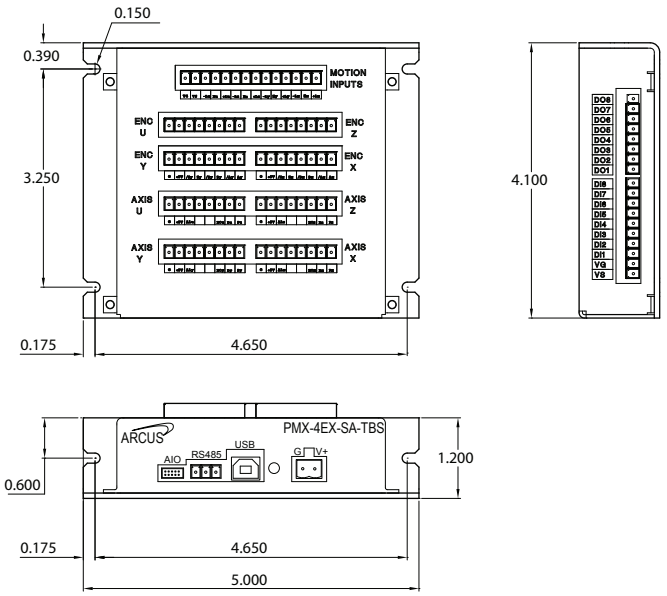
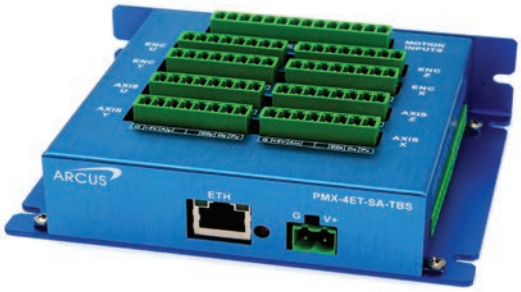


Options

Available as Core and Board Modules for OEM Applications

VMX-30: 3.3", 16 gray scale, RS-232/422/485

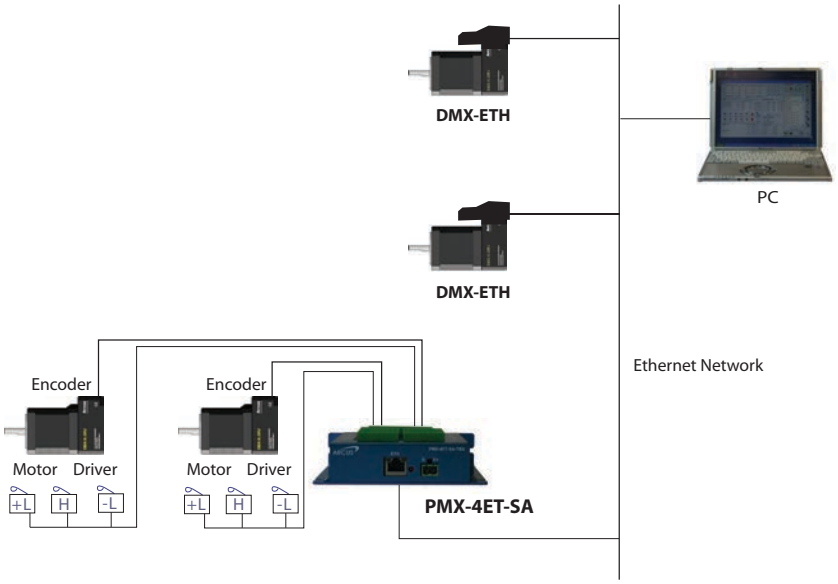
VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485



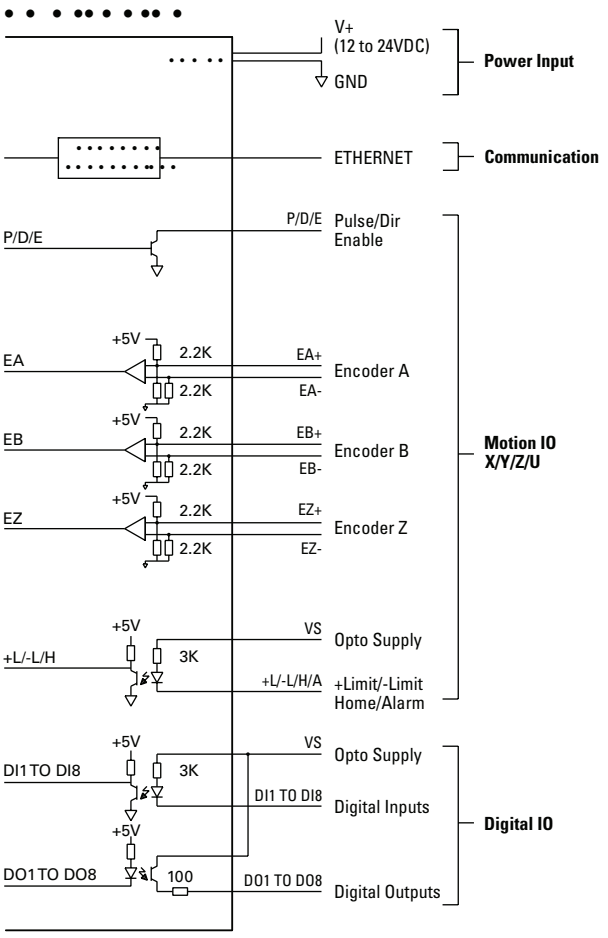
Also available with DB9 Top Junction Board for Easy Connection with DMX-A2-DRV

Specifications

- 4 Axis Advanced Motion Controller
- 10 Mbps Ethernet Communication
- 6M maximum pulse rate output
- Trapezoidal or s-curve acceleration
- On-the-fly speed change
- Continuous linear coordinated buffered XYZ move
- XYZU linear coordinated motion
- XY circular and arc coordinated motion
- Homing using Home and/or Index encoder channel
- Pulse/Dir/Enable open collector outputs per axis
- Opto-isolated +Limit, -Limit, Home, and Alarm inputs per axis
- Single-ended or differential quadrature encoder inputs per axis
- Opto-isolated Digital Inputs (8)
- Opto-isolated Digital Outputs (8)
- High speed position capture inputs and sync outputs
- Built-in StepNLoop closed loop control algorithm
- BASIC-like standalone programming language
- Multi-task programming support



Electrical Interface



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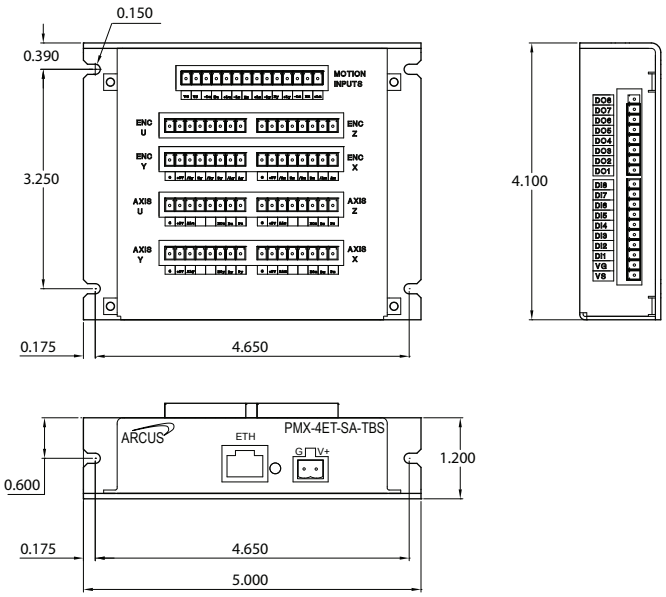
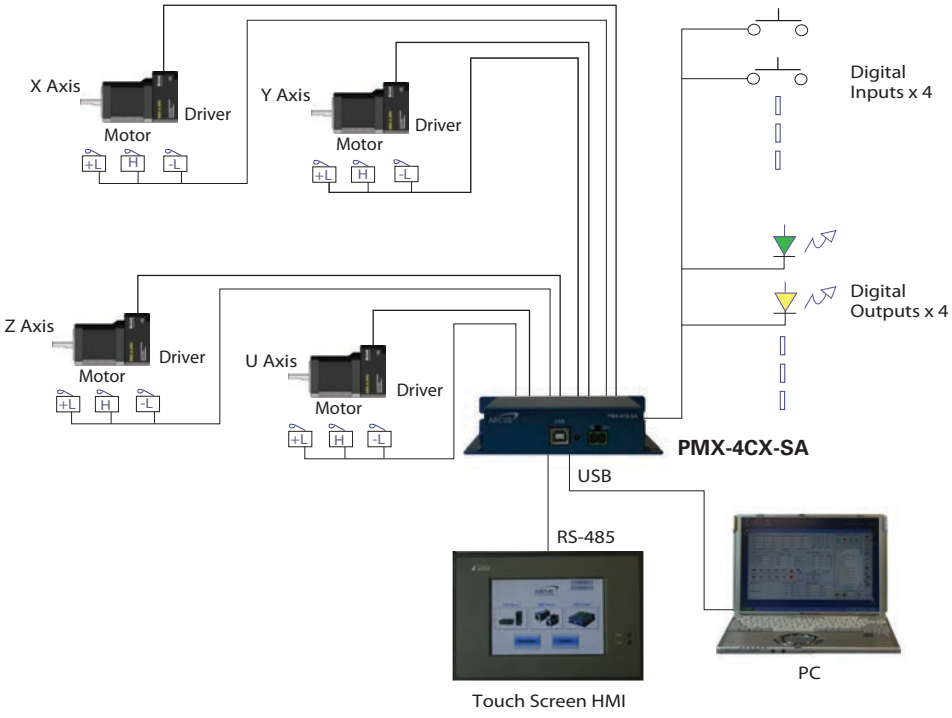
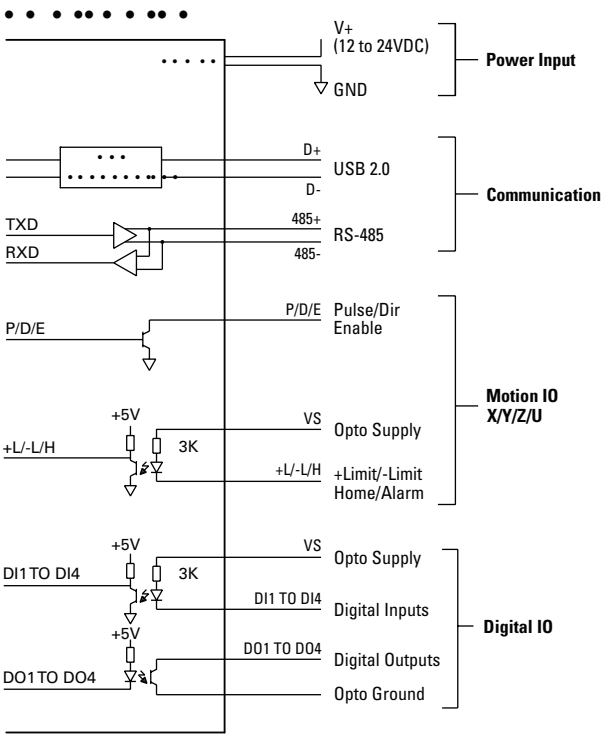


Specifications

- 4 Axis Basic Motion Controller
- USB 2.0 and RS-485 Communication
- 400K maximum pulse rate output
- Trapezoidal acceleration
- Pulse/Dir/Enable open collector outputs per axis
- Opto-isolated +Limit, -Limit, and Home inputs per axis
- Opto-isolated Digital Inputs (4)
- Opto-isolated Digital Outputs (4)
- BASIC-like standalone programming language
- Multi-task programming support



Electrical Interface



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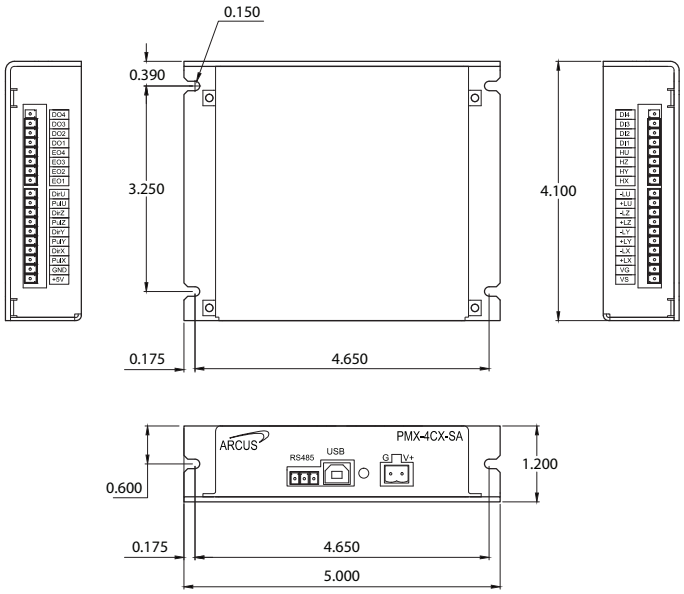


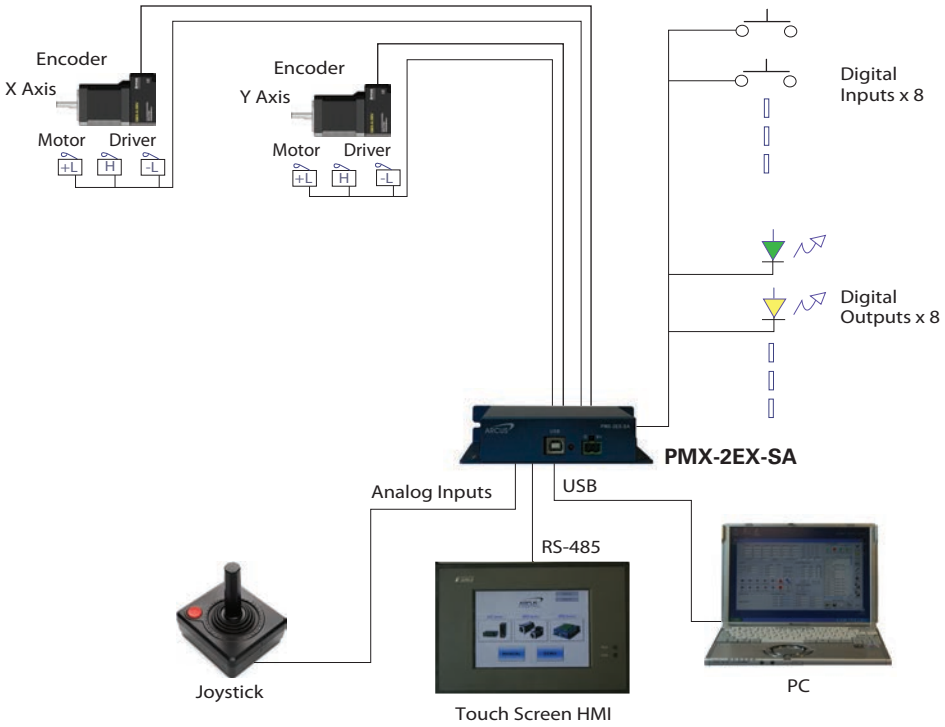
Options

VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

Specifications

- 2 Axis Advanced Motion Controller
- USB 2.0 and RS-485 Communication
- 6M maximum pulse rate output
- Trapezoidal or s-curve acceleration
- On-the-fly speed change
- XY linear coordinated motion
- Homing using Home and/or Index encoder channel
- Pulse/Dir/Enable open collector outputs per axis
- Opto-isolated +Limit, -Limit, and Home inputs per axis
- Single-ended or differential quadrature encoder inputs per axis
- Opto-isolated Digital Inputs (8)
- Opto-isolated Digital Outputs (8)
- Analog Inputs 10-bit resolution (2)
- Built-in joystick control for XY axes
- Built-in StepNLoop closed loop control algorithm
- BASIC-like standalone programming language
- Multi-task programming support



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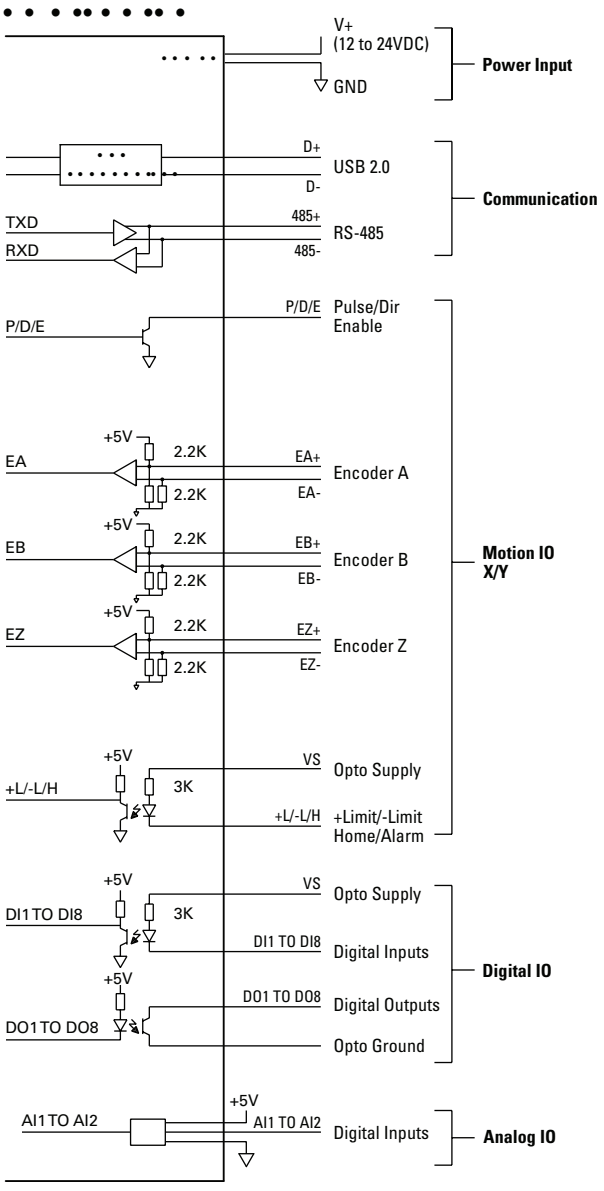

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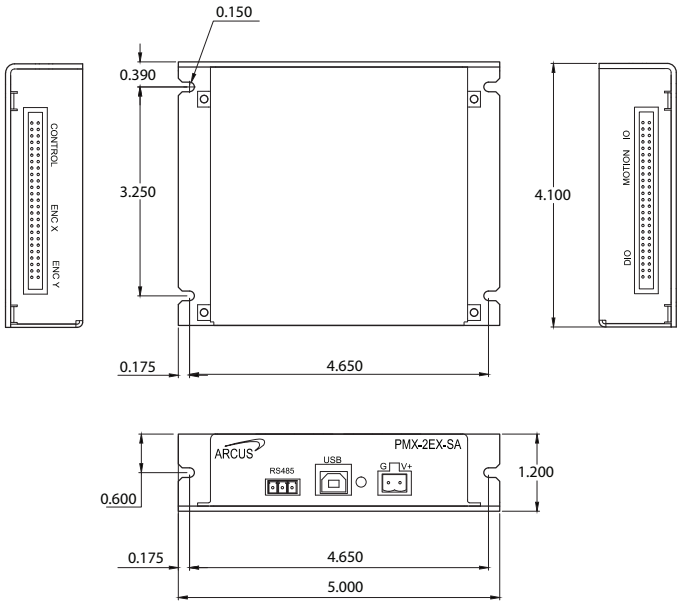


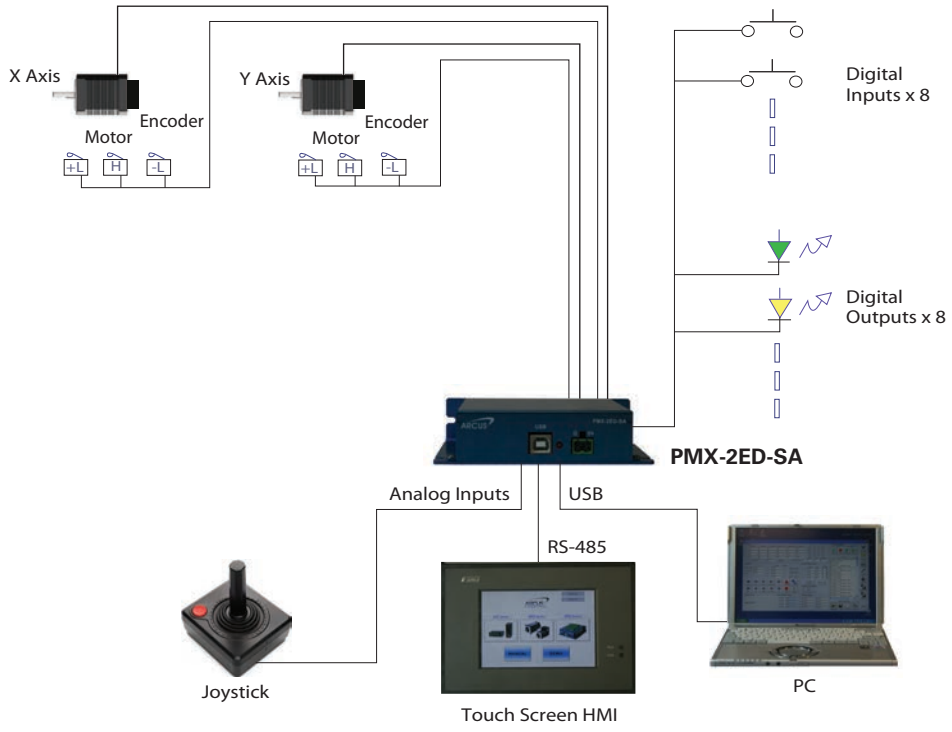
Options

VMX-30: 3.3", 16 gray scale, RS-232/422/485

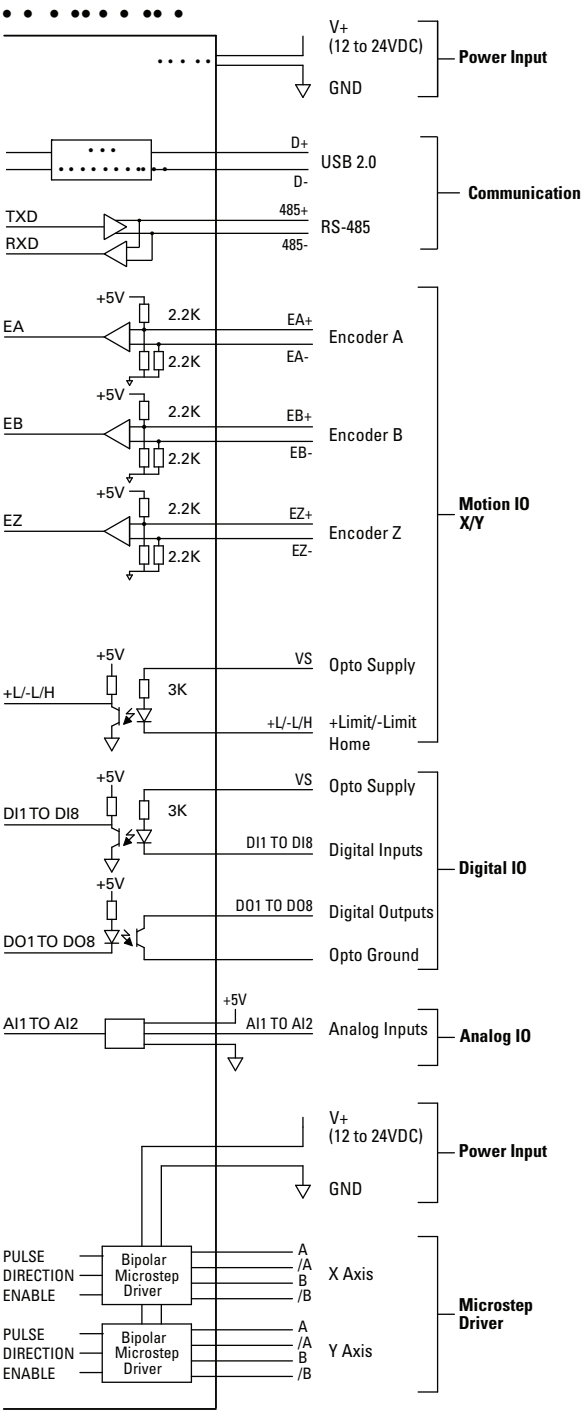
VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

Specifications

- 2 Axis Advanced Motion Controller
- USB 2.0 and RS-485 Communication
- Built in X and Y axis microstep drivers (1.5 Amp/8 microstep/24 VDC)
- Trapezoidal or s-curve acceleration
- On-the-fly speed change
- XY linear coordinated motion
- Homing using Home and/or Index encoder channel
- Opto-isolated +Limit, -Limit, and Home inputs per axis
- Single-ended or differential quadrature encoder inputs per axis
- Opto-isolated Digital Inputs (8)
- Opto-isolated Digital Outputs (8)
- Analog inputs 10-bit resolution (2)
- Built-in joystick control for XY axes
- Built-in StepNLoop closed loop control algorithm
- BASIC-like standalone programming language
- Multi-task programming support



Electrical Interface



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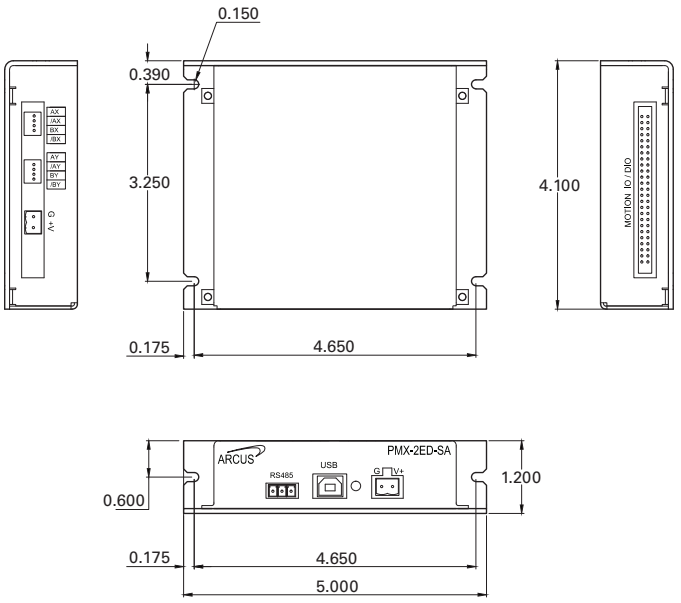


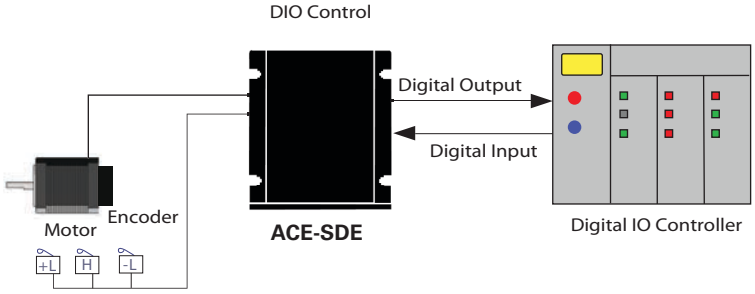
Options

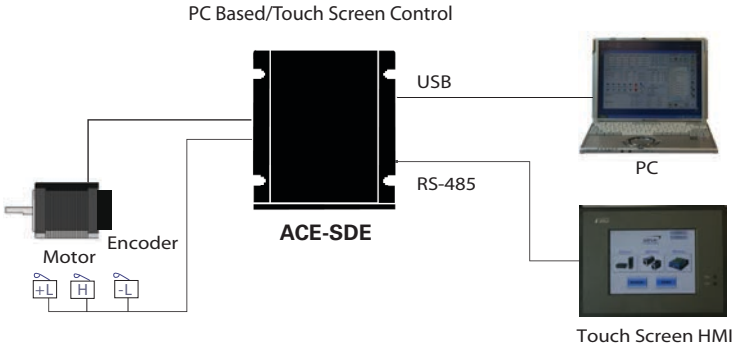
VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

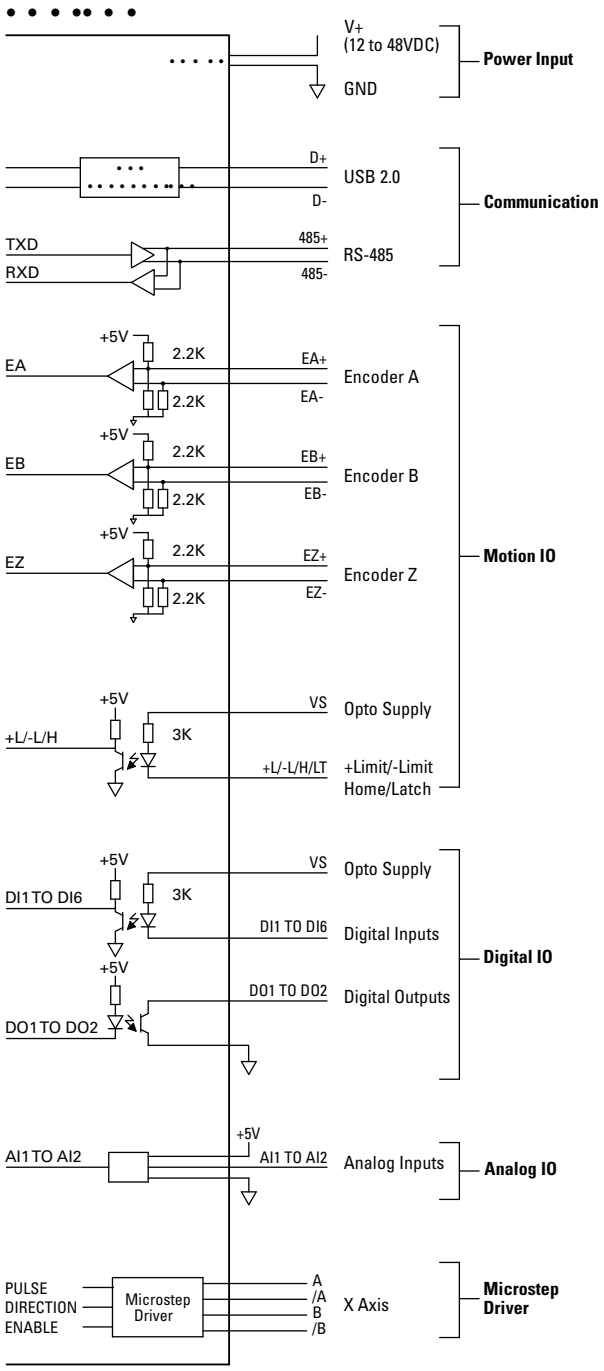
Specifications

- USB 2.0 and RS-485 Communication
- Digital IO Communication + Easy To Use Interface
- 12 to 48 VDC voltage input
- Stand-alone control via a BASIC-like programming language
- Multi-task programming capable
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated Digital inputs (6)
- Opto-isolated Digital outputs (2)
- A/B/Z Differential Encoder inputs
- StepNLoop closed-loop control
- On-the-fly speed change
- S-curve/Trapezoidal acceleration profile control
- 10-bit analog inputs (2)
- Built-in 3 Amp bipolar microstep driver
- Built-in joystick control
- Microstep range from 2 to 500





Electrical Interface



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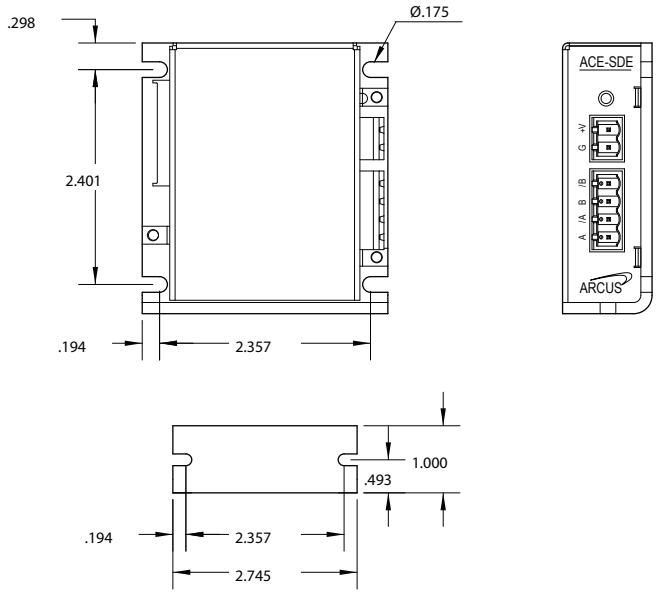


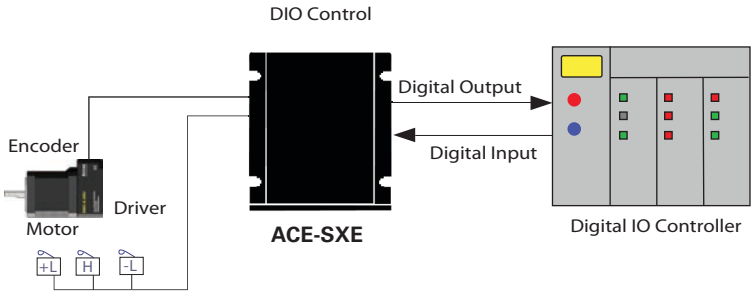
Options

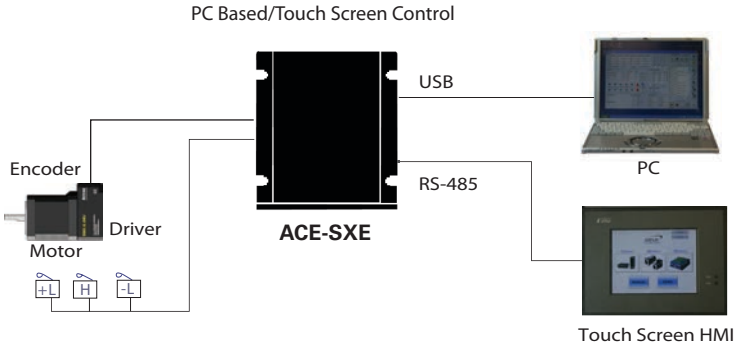
VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

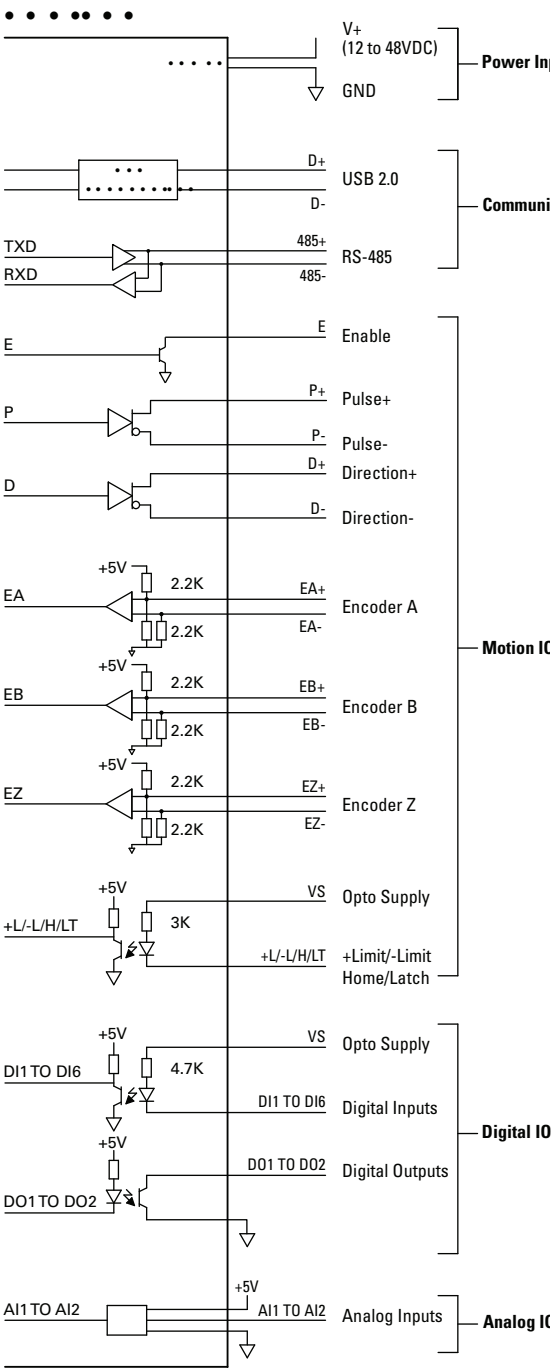
Specifications

- USB 2.0 and RS-485 Communication
- Digital IO communication + easy-to-use interface
- Stand-alone control via a BASIC-like programming language
- Multi-task programming capable
- 12 to 48 VDC voltage input
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated Digital inputs (6)
- Opto-isolated Digital outputs (2)
- 10-bit analog inputs (2)
- Pulse/Dir differential signal output
- 6M maximum pulse rate output
- Open-collector enable output
- A/B/Z Differential Encoder inputs
- StepNLoop closed-loop control
- Built-in joystick control





Electrical Interface



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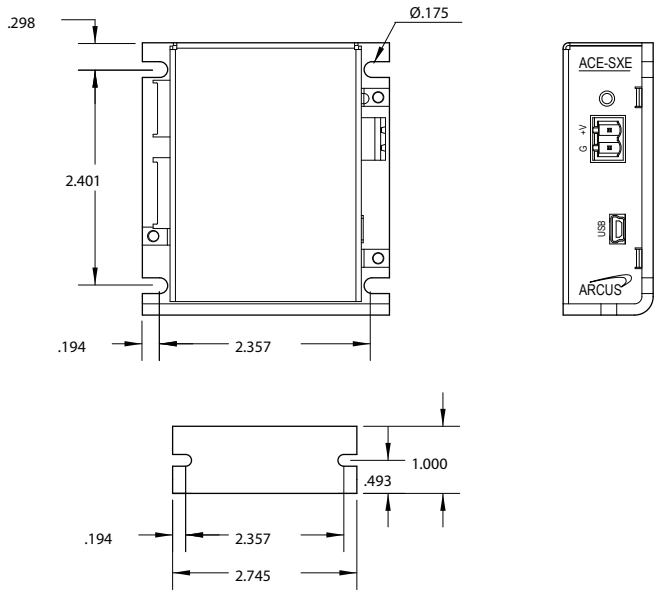


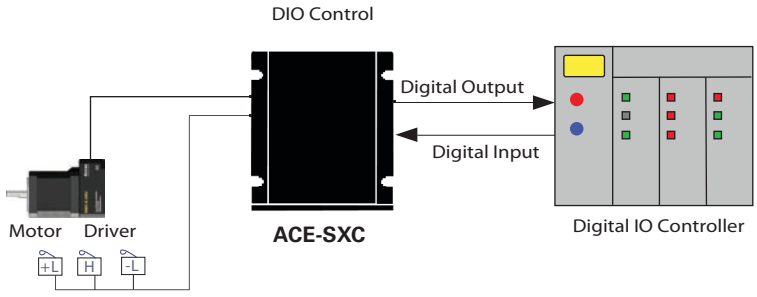
Options

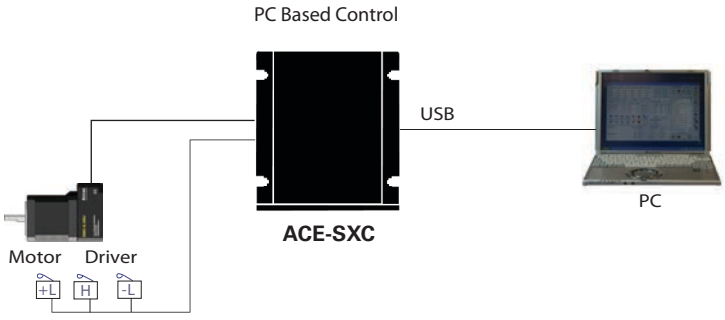
VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

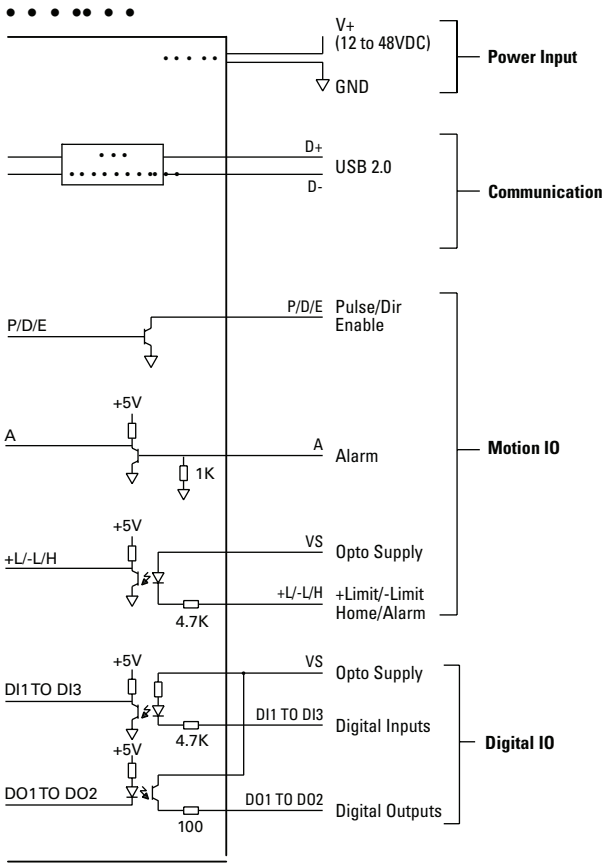
Specifications

- USB 2.0 Communication
- Stand-alone control via a BASIC-like programming language
- Multi-task programming capable
- 12 to 48 VDC voltage input
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated Digital inputs (3)
- Opto-isolated Digital outputs (2)
- Pulse/Dir differential signal output
- 400K maximum pulse rate output
- Open-collector enable output
- TTL Alarm input
- DMX-K-DRV / DMX-A2-DRV / ACE-SDX driver configurator

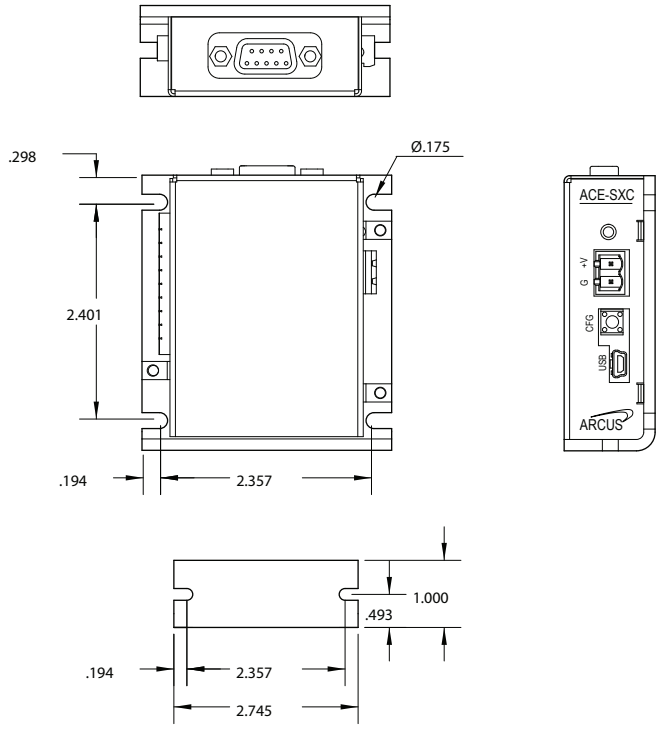




Electrical Interface

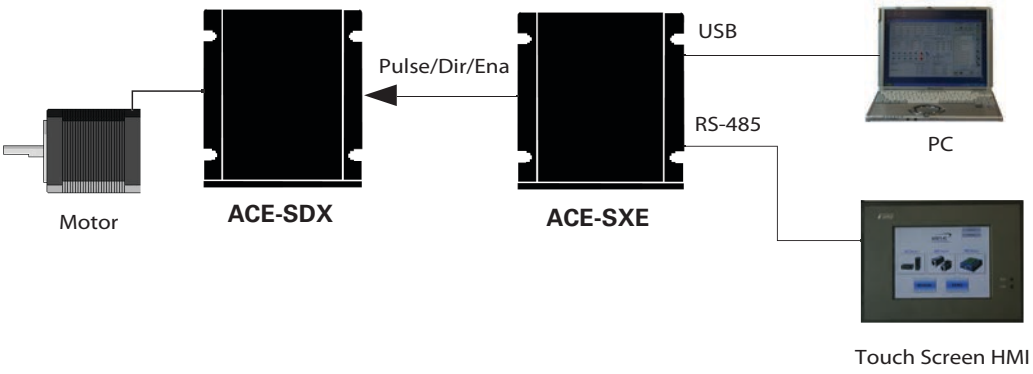


Dimensions

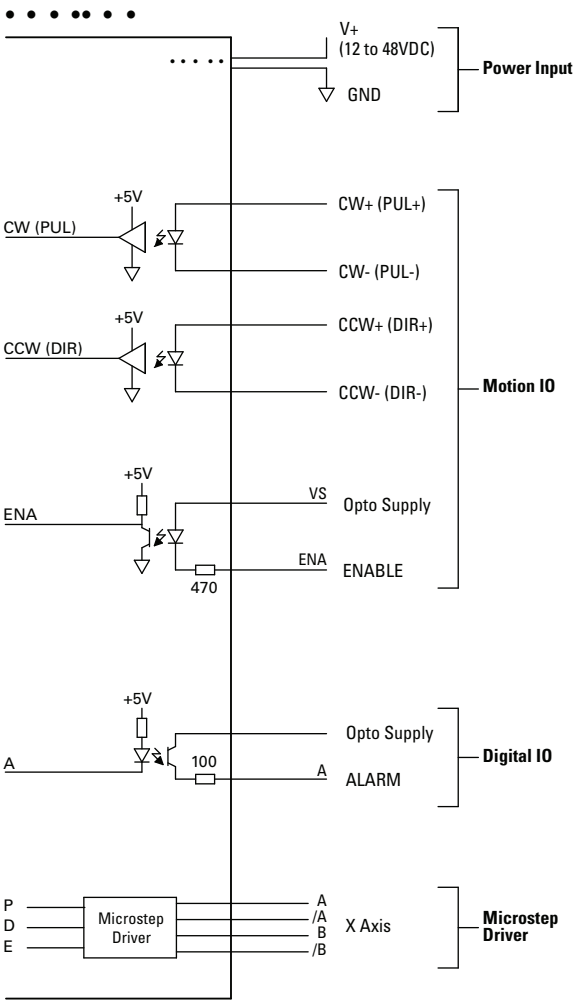


Specifications

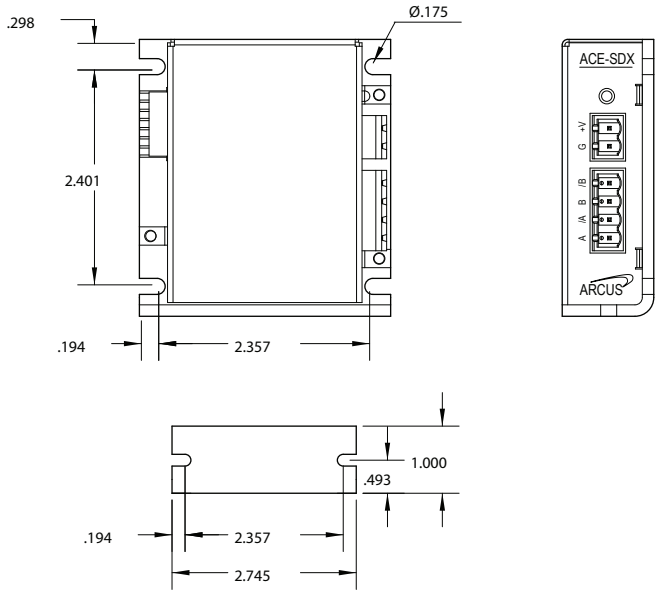
- 12 to 48 VDC voltage input
- 100mA to 3.0A current setting
- 2-500 microstep
- 1M pps maximum pulse rate support
- Opto-isolated differential Pulse/Dir (CW/CCW) inputs
- Opto-isolated driver enable input
- Opto-isolated over-temperature alarm output
- Software Configurable



Electrical Interface



Dimensions

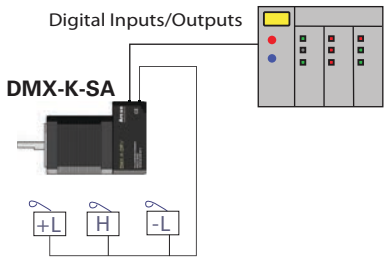


DMX-CAN (CANOpen Version)
Available in NEMA 23 size

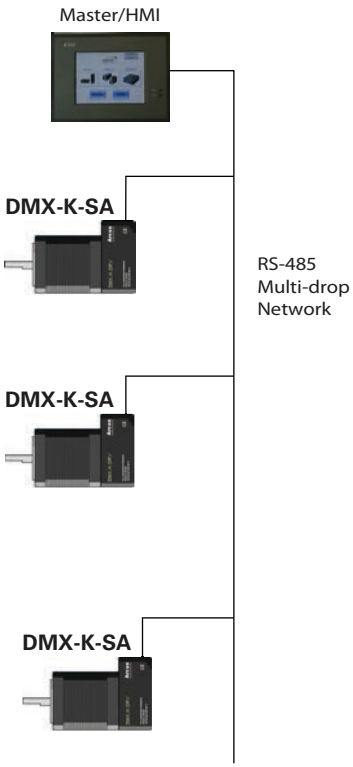
Specifications

- RS-485/232 Communication (9600-115K bps)
- Stand-alone control via a BASIC-like programming language
- 12 to 35 VDC voltage input
- 16 microstep
- 100mA to 2.5A current setting
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated digital inputs (6)
- Opto-isolated digital outputs (3)
- High speed position capture digital input
- Position synchronized digital output
- On-the-fly speed change
- 1000 line incremental encoder (4000 counts/rev with 4x quadrature decoding)
- Available in NEMA 17 and 23 sizes in double and triple stack lengths
- Multi-task programming support

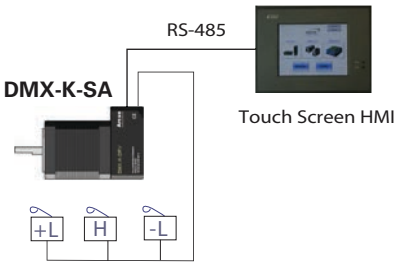
DIO Control



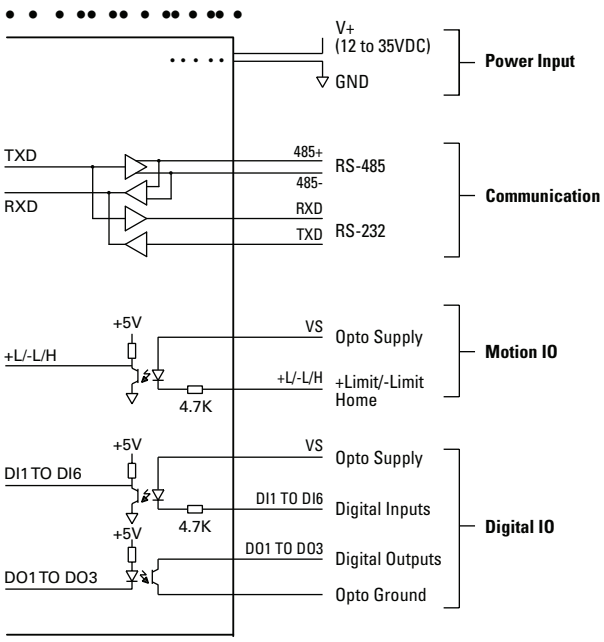
RS-485 Network Control



Touch Screen Control

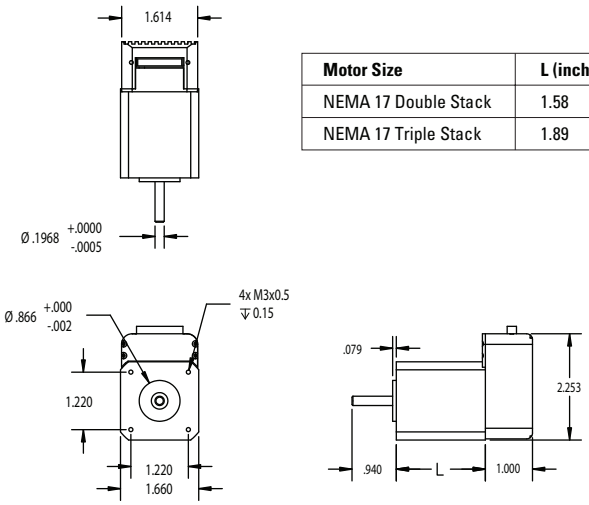


Electrical Interface



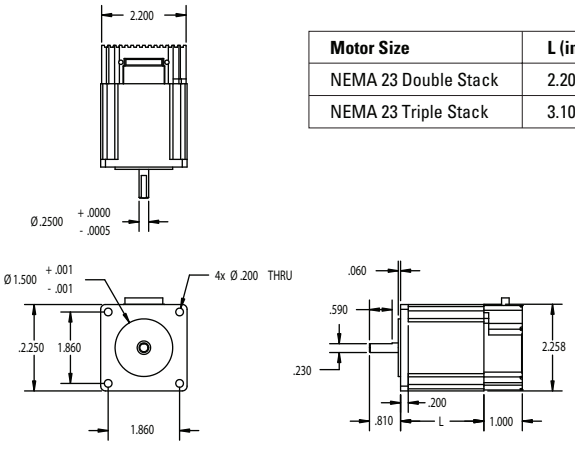
Dimensions

DMX-K-SA-17



Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

DMX-K-SA-23



Motor Size	L (inches)
NEMA 23 Double Stack	2.20
NEMA 23 Triple Stack	3.10

Options

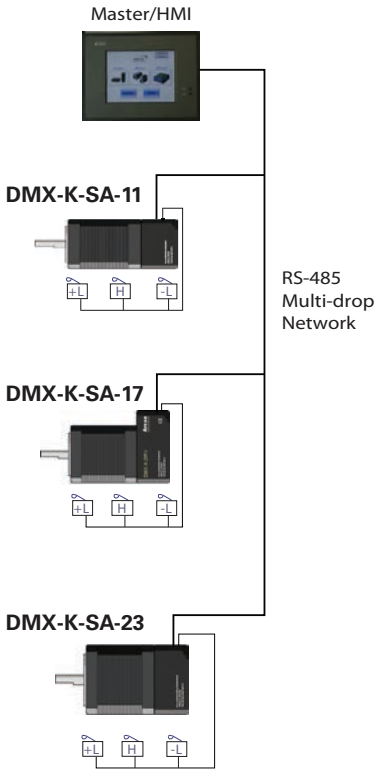
VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

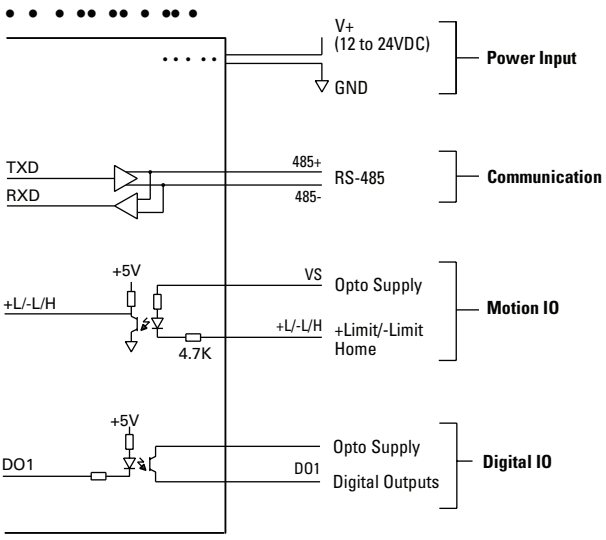
Specifications

- Compact size all-in-one NEMA 11 size motor + driver + controller + encoder
- RS-485 Communication (9600-115K bps)
- Stand-alone control via a BASIC-like programming language
- 12 to 24 VDC voltage input
- 16 microstep
- 100mA to 1.5A current setting
- Opto-isolated +Limit, -Limit, and Home inputs (also configurable as general purpose inputs)
- Opto-isolated digital output (1)
- Homing routine using home or limit input
- Trapezoidal accel/decel control
- Max pulse rate of 30K pps
- Built-in 256 counts/rev encoder
- Available in NEMA 11 size in double and triple stack lengths
- Multi-task programming support

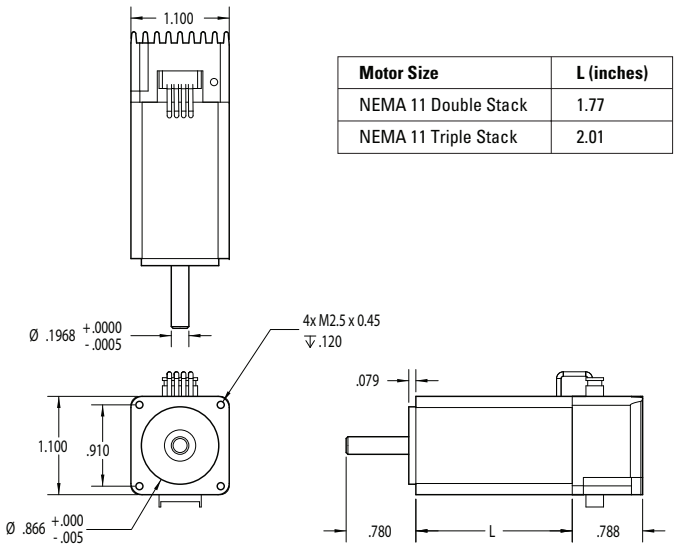
RS-485 Network Control



Electrical Interface



Dimensions



Motor Size	L (inches)
NEMA 11 Double Stack	1.77
NEMA 11 Triple Stack	2.01

Options

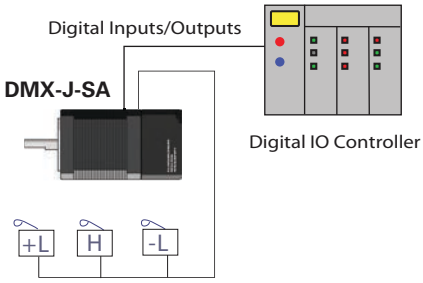
VMX-30: 3.3", 16 gray scale, RS-232/422/485

VMX-51: 5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

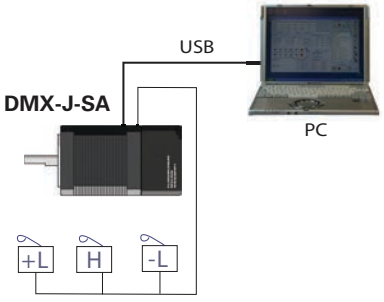
Specifications

- USB 2.0 Communication
- Stand-alone control via a BASIC-like programming language
- 12 to 24 VDC voltage input
- 16 microstep
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated digital inputs (2)
- Opto-isolated digital outputs (2)
- Available in NEMA 17 size in double and triple stack lengths
- Multi-task programming support

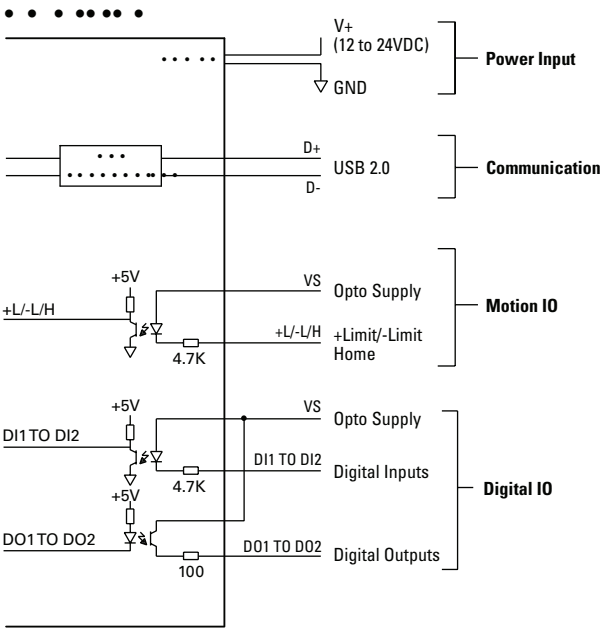
DIO Control



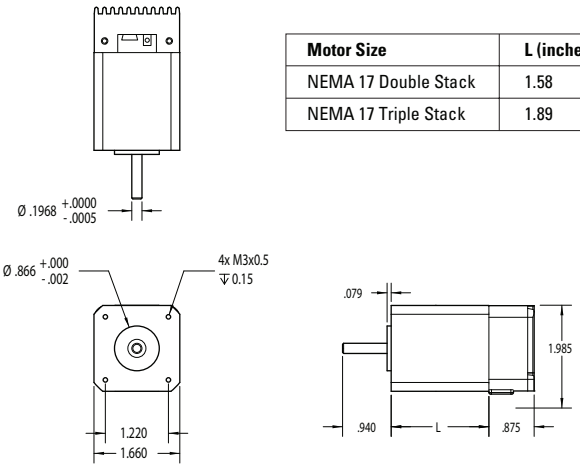
PC Based Control



Electrical Interface



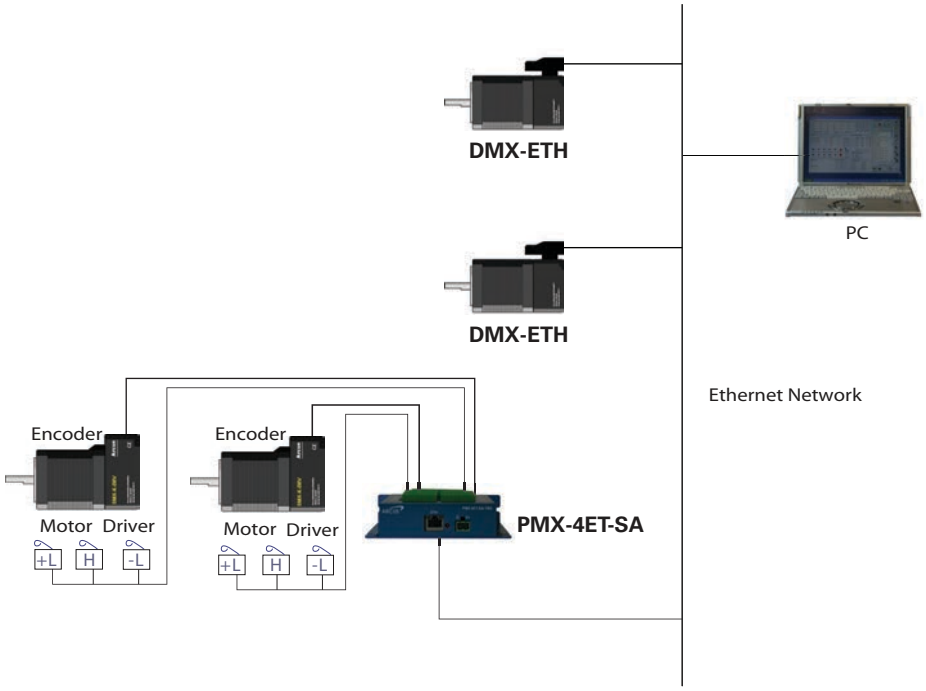
Dimensions



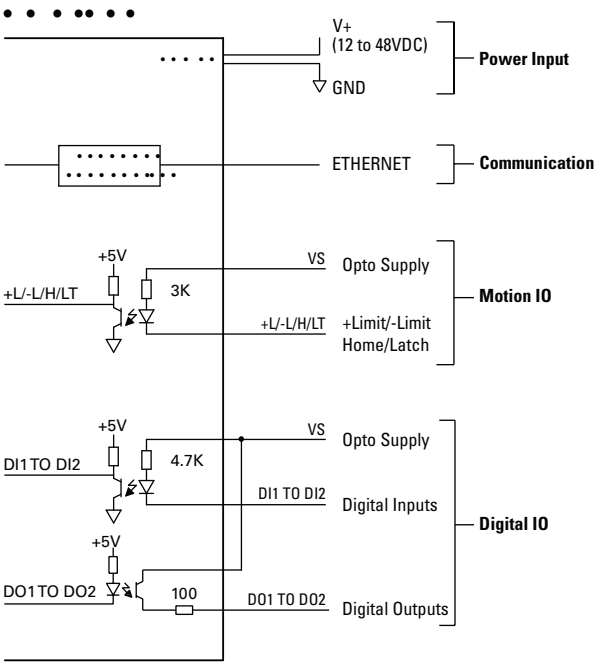
Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

Specifications

- 10 Mbps Ethernet Communication
- Stand-alone control via a BASIC-like programming language
- 12 to 48 VDC voltage input
- 2-500 microstep
- 100mA to 3.0A current setting
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated Digital inputs (2)
- Opto-isolated Digital outputs (2)
- High speed position capture digital input
- 1000 line incremental encoder (4000 counts/rev with 4x quadrature decoding)
- StepNLoop closed-loop control
- On-the-fly speed change
- S-curve/Trapezoidal acceleration profile control
- Available in NEMA 17 and 23 sizes in double and triple stack lengths
- Multi-task programming support

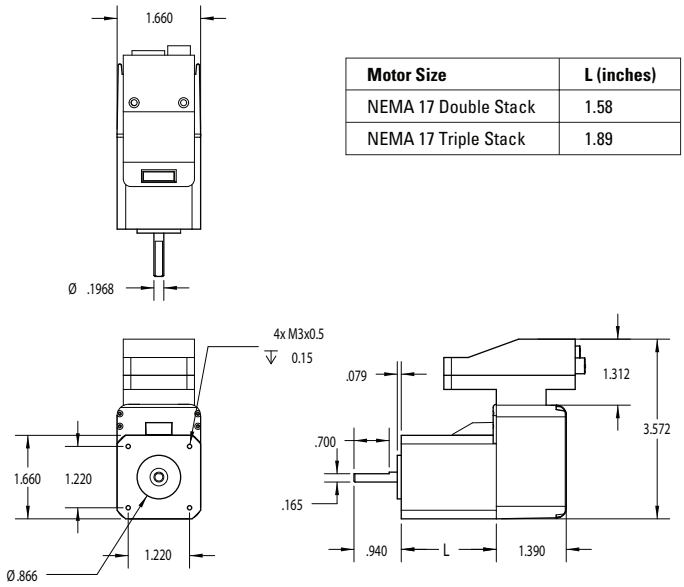


Electrical Interface



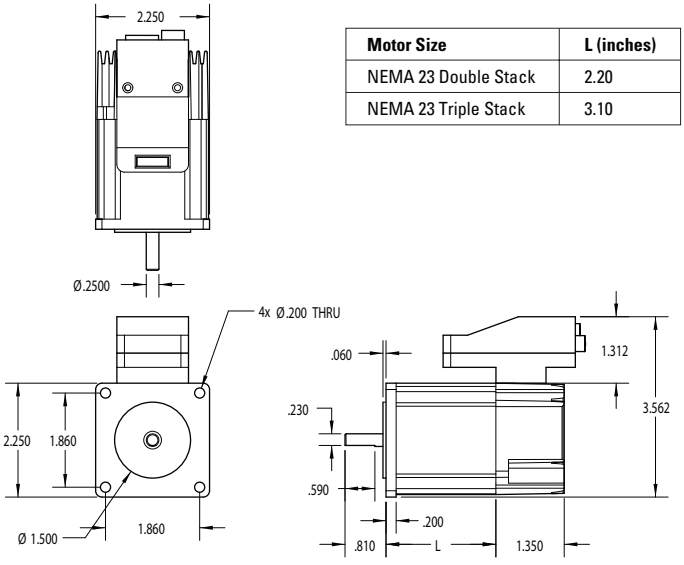
Dimensions

DMX-ETH-17



Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

DMX-ETH-23

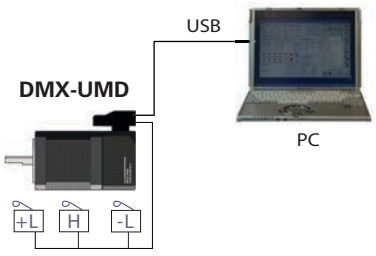


Motor Size	L (inches)
NEMA 23 Double Stack	2.20
NEMA 23 Triple Stack	3.10

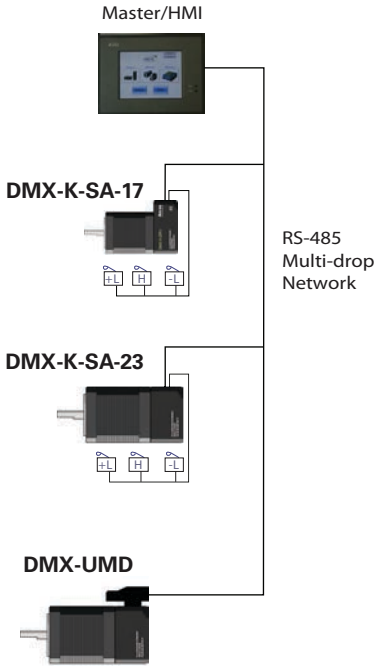
Specifications

- USB 2.0 and RS-485 (9600-115K bps) Communication
- Digital IO communication + easy-to-use interface
- Stand-alone control via a BASIC-like programming language
- 12 to 48 VDC voltage input
- 2-500 microstep
- 100mA to 3.0A current setting
- Opto-isolated +Limit, -Limit, and Home inputs
- Opto-isolated digital inputs (6)
- Opto-isolated digital outputs (2)
- 1000 line incremental encoder (4000 counts/rev with 4x quadrature decoding)
- High speed position capture digital input
- Position sync digital output
- StepNLoop closed-loop control
- On-the-fly speed change
- S-curve/Trapezoidal acceleration profile control
- Available in NEMA 17 and 23 sizes in double and triple stack lengths
- Multi-task programming support

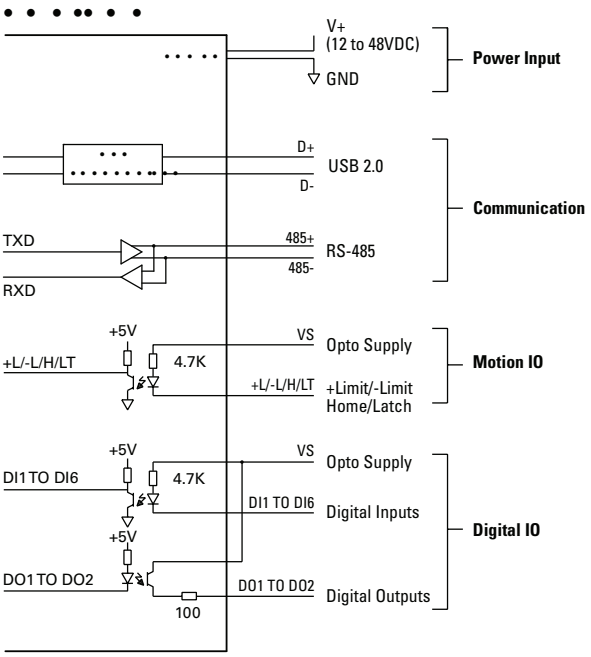
PC Based Control



RS-485 Network Control

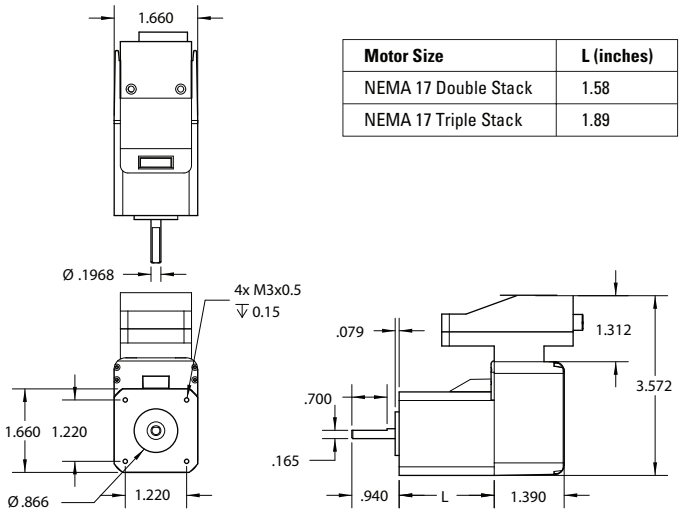


Electrical Interface



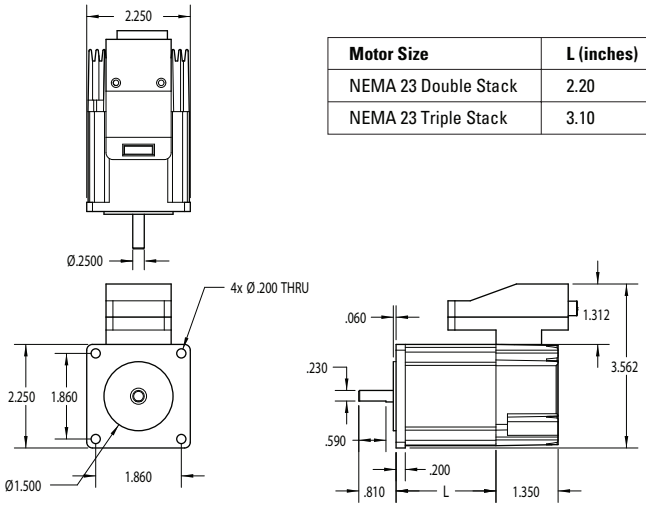
Dimensions

DMX-UMD-17



Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

DMX-UMD-23



Motor Size	L (inches)
NEMA 23 Double Stack	2.20
NEMA 23 Triple Stack	3.10

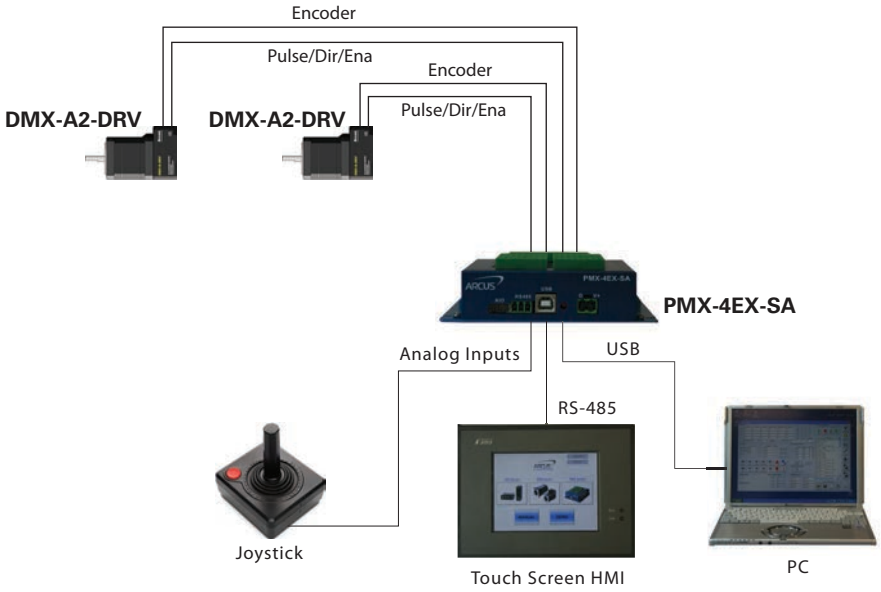
Options

VMX-30: 3.3", 16 gray scale, RS-232/422/485

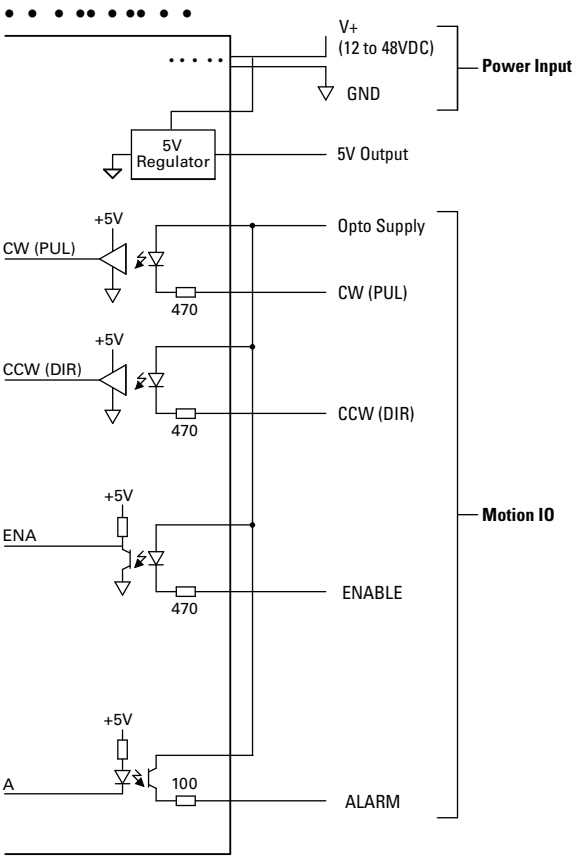
VMX-51:5.7", 16 gray scale, RS-232/422/485
VMX-70: 7.0", 65K color, RS-232/422/485

Specifications

- 12 to 48 VDC voltage input
- 100mA to 3.0A current setting
- 2-500 microstep
- 1M maximum pulse rate input support
- Opto-isolated differential Pulse/Dir (CW/CCW) inputs
- Opto-isolated driver enable input
- Opto-isolated over-temperature alarm output
- Available in NEMA 17 and 23 sizes in double and triple stack lengths
- Available with optional 1000 count encoder
- Software configurable

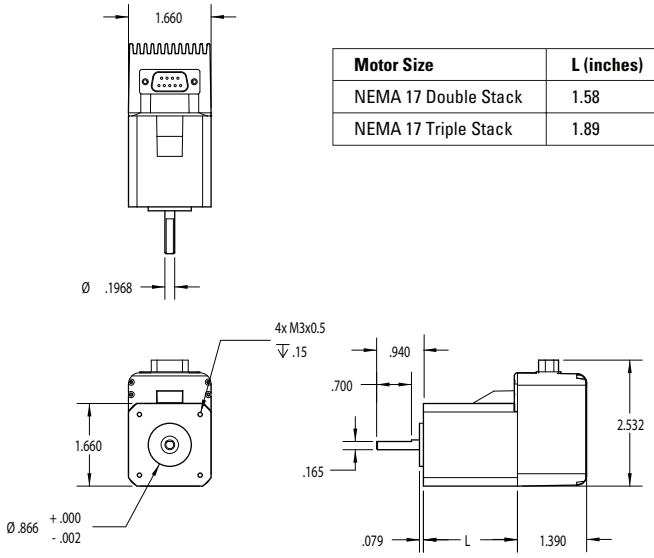


Electrical Interface



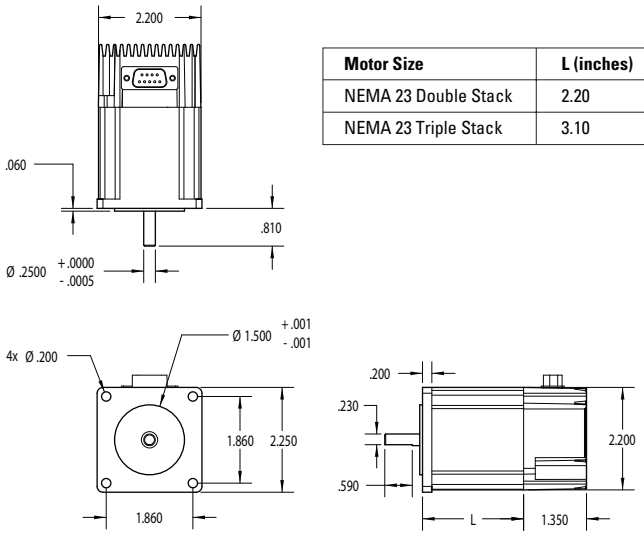
Dimensions

DMX-A2-DRV-17

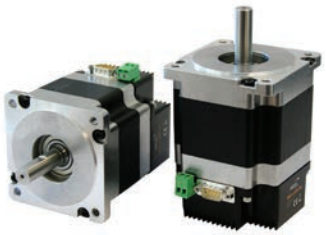


Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

DMX-A2-DRV-23



Motor Size	L (inches)
NEMA 23 Double Stack	2.20
NEMA 23 Triple Stack	3.10

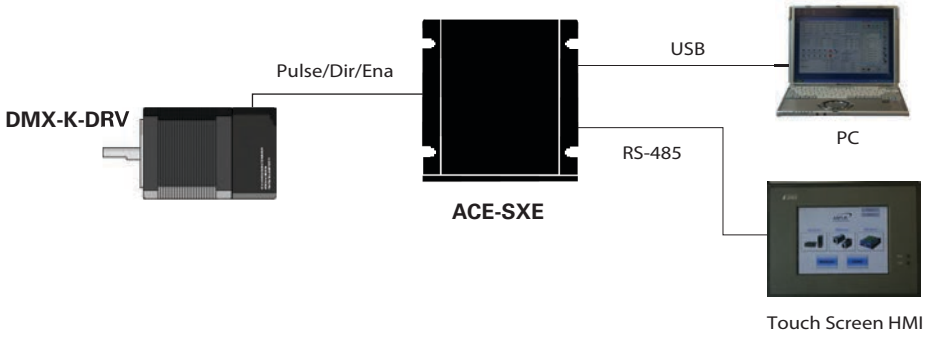


Available in NEMA 34 size

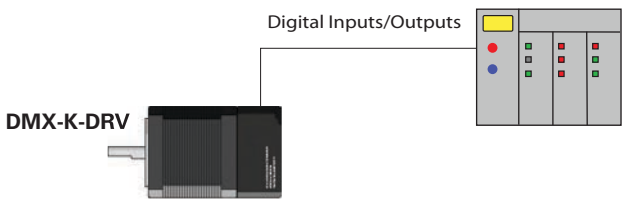
Specifications

- 12 to 24 VDC Voltage Input
- Full/Half/Quarter/16 microstep
- Configurable as Driver mode or Controller mode
- Driver mode: One clock (Pulse/Dir) or two clock (CW/CCW) support
- Driver mode: 200K maximum pulse rate input
- Controller mode: Absolute, incremental, jogging move type support
- Controller mode: 4 motion profile selection, start/stop input, status output
- Controller mode: 16K maximum pulse rate output speed
- Opto-isolated differential Pulse/Dir inputs (motion profile selector in controller mode)
- Opto-isolated driver enable input (start/stop input in controller mode)
- Opto-isolated over-temperature alarm output (status output in controller mode)
- Available in NEMA 11, 17 and 23 sizes in double and triple stack lengths
- Available in NEMA 34 sizes in single and double stack lengths
- Software configurable

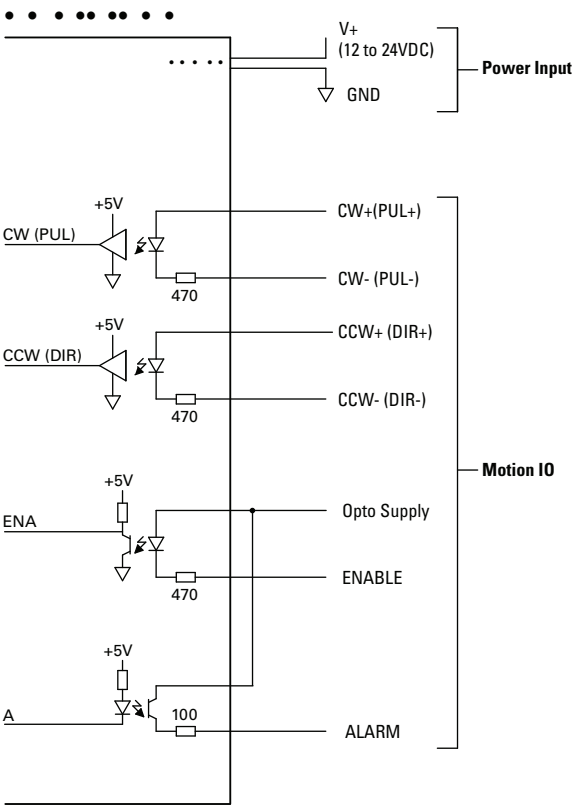
Driver Mode



Controller Mode

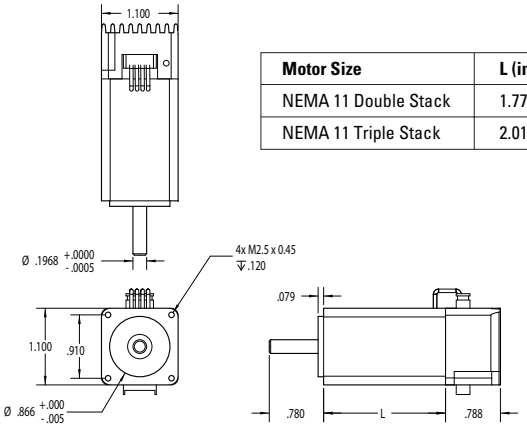


Electrical Interface



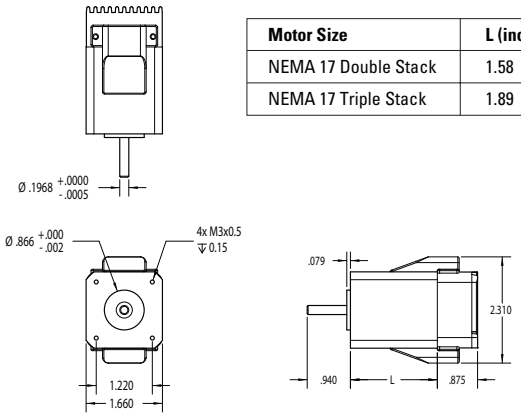
Dimensions

DMX-K-DRV-11



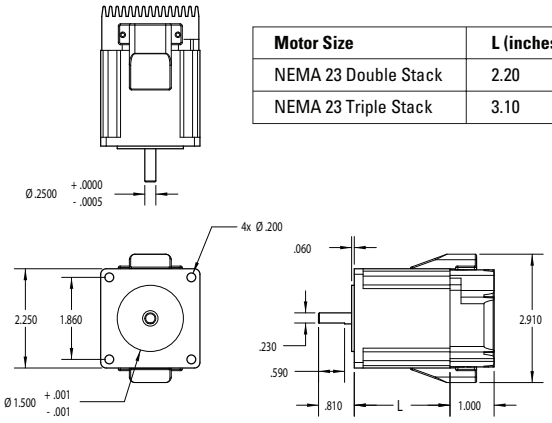
Motor Size	L (inches)
NEMA 11 Double Stack	1.77
NEMA 11 Triple Stack	2.01

DMX-K-DRV-17



Motor Size	L (inches)
NEMA 17 Double Stack	1.58
NEMA 17 Triple Stack	1.89

DMX-K-DRV-23



Motor Size	L (inches)
NEMA 23 Double Stack	2.20
NEMA 23 Triple Stack	3.10

Power Supplies

PSU-100
24V 4A 100W Power Supply

PSU-WP24
24V 2A Wall Plug Power Supply

PSU-150
24V 6A 150W Power Supply

Junction Boards

JBD-K-SA
DMX-K-SA Junction Board

JBD-J-SA
DMX-J-SA Junction Board

JBD-K-SA-11
DMX-K-SA-11 Junction Board

JBD-50
PMX-2EX/2ED 50 pin Junction Board

Cables

CBL-USB-(S/M)
USB Cables

DMX-CFG-USB-A2
DMX-A2-DRV Configuration Cable

DMX-CFG-USB-K(117/23)
DMX-K-DRV Configuration Cables

DMX-CFG-USB-ACE
ACE-SDX Configuration Cable

Converters

ACE-USB-485
USB to RS-485 Converter

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