

wl-mio.com

WL-MIO Multipurpose I/O Process Controller

Configuration

Single MIO Systems

Every WL-MIO system starts with the backplane ID and Module ID. The backplane ID is determined by jumpers located on the rear of the backplane, numbered 8, 16, 32 and 64. The module ID is determined by the slot position of the board.

The diagram illustrates a single WL-MIO system. It features a central backplane with several modules inserted. A terminal block is connected to the backplane. Labels indicate the height of 3.5", width of 5.8", and depth of 8.25". Dimensions for the backplane are also shown: 4.0" for rail length, 1.0" for width, and 1.0" for depth. A red box highlights the backplane, with a red arrow pointing to it from the text above. A callout box on the right asks, "Are the Backplane dimensions still valid with enclosure?".

Typical WL-MIO System Block Diagram

Dimensions: 3.5" Height, 5.8" Width, 8.25" Depth

Backplane ID: Set via Jumper

Module IDs: WL-MIO Module ID 0 (Typically 5 VDC Power Supply), WL-MIO Module ID 1 (Typically Raspberry Pi Module), WL-MIO Module ID 2, WL-MIO Module ID 3, WL-MIO Module ID 4, WL-MIO Module ID 5, WL-MIO Module ID 6, WL-MIO Module ID 7

Power Input: 24VDC (Typical)

Backplane Field Wiring

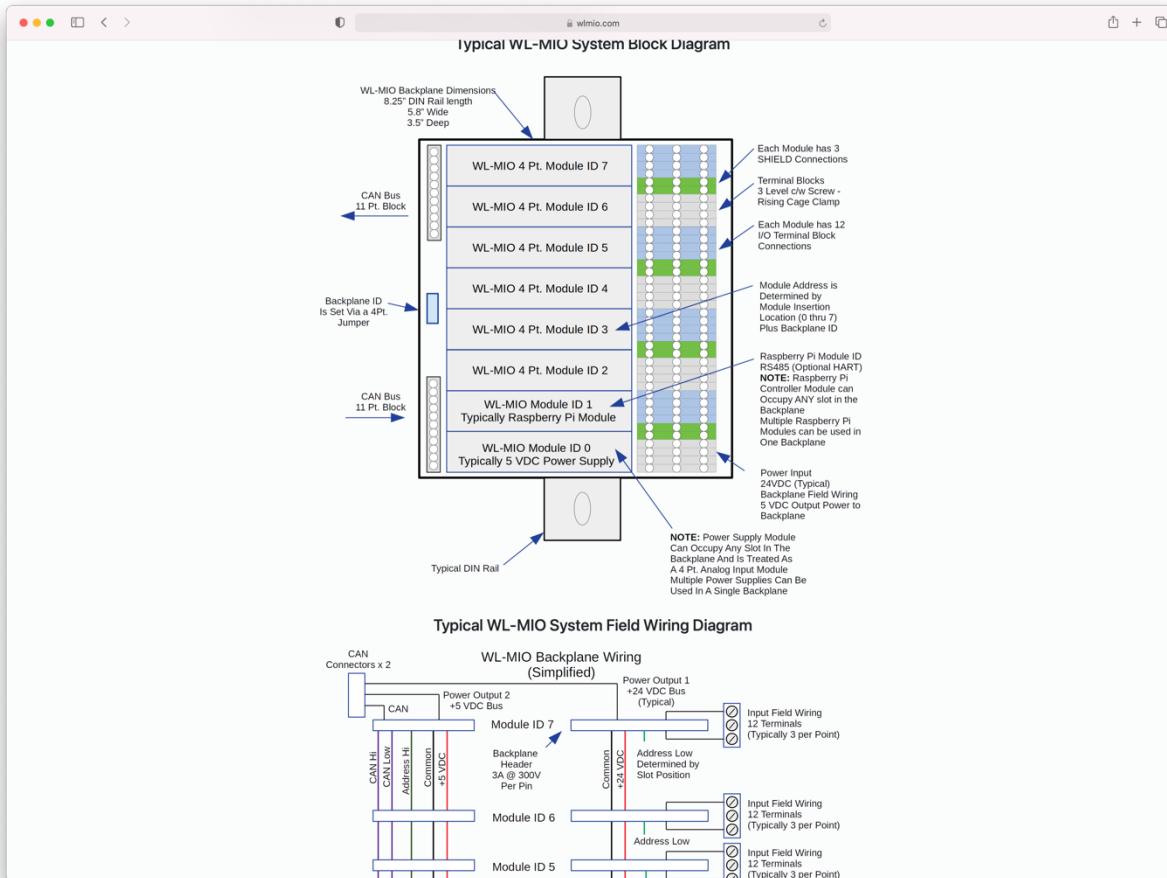
Module Address is Determined by Module Insertion Location (0 thru 7) Plus Backplane ID

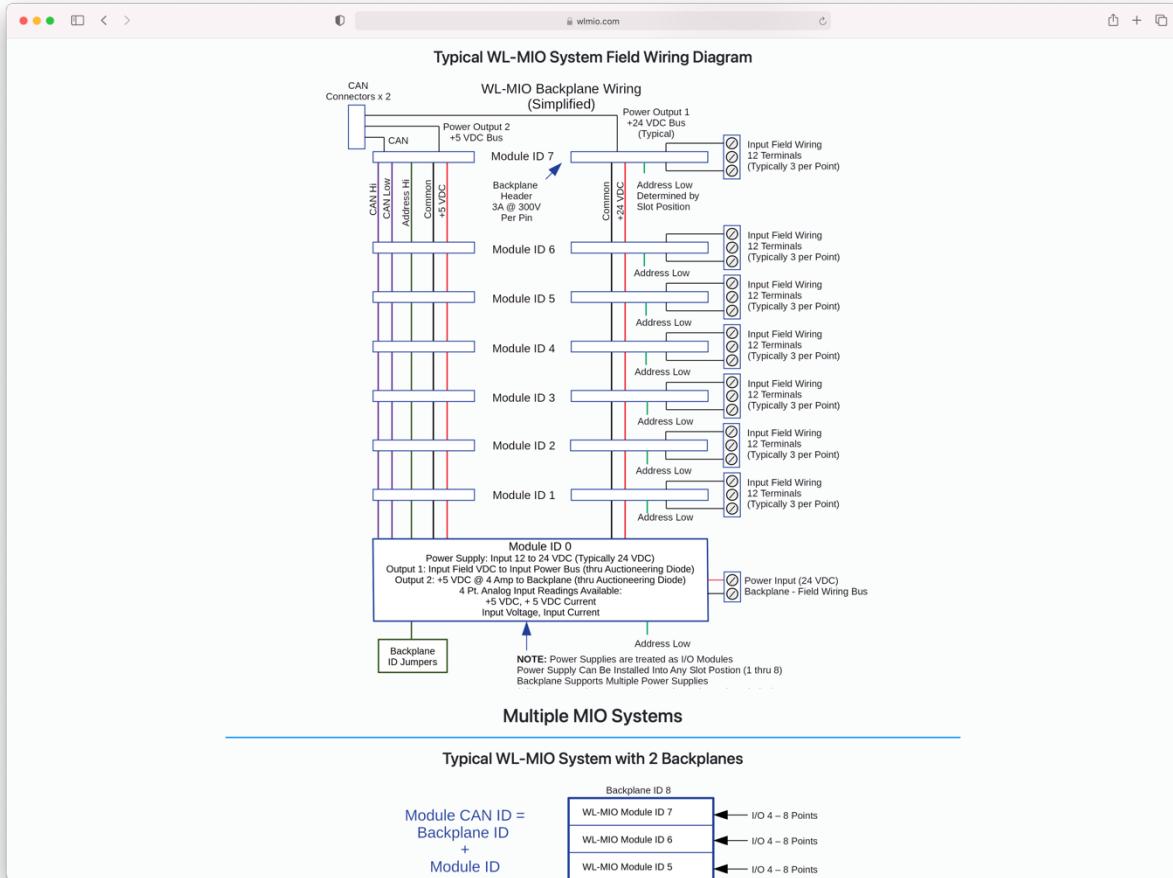
Raspberry Pi Module ID RS485 (Optional HART)
NOTE: Raspberry Pi Control Module can Occupy ANY slot in the Backplane
Multiple Raspberry Pi Modules can be used in One Backplane

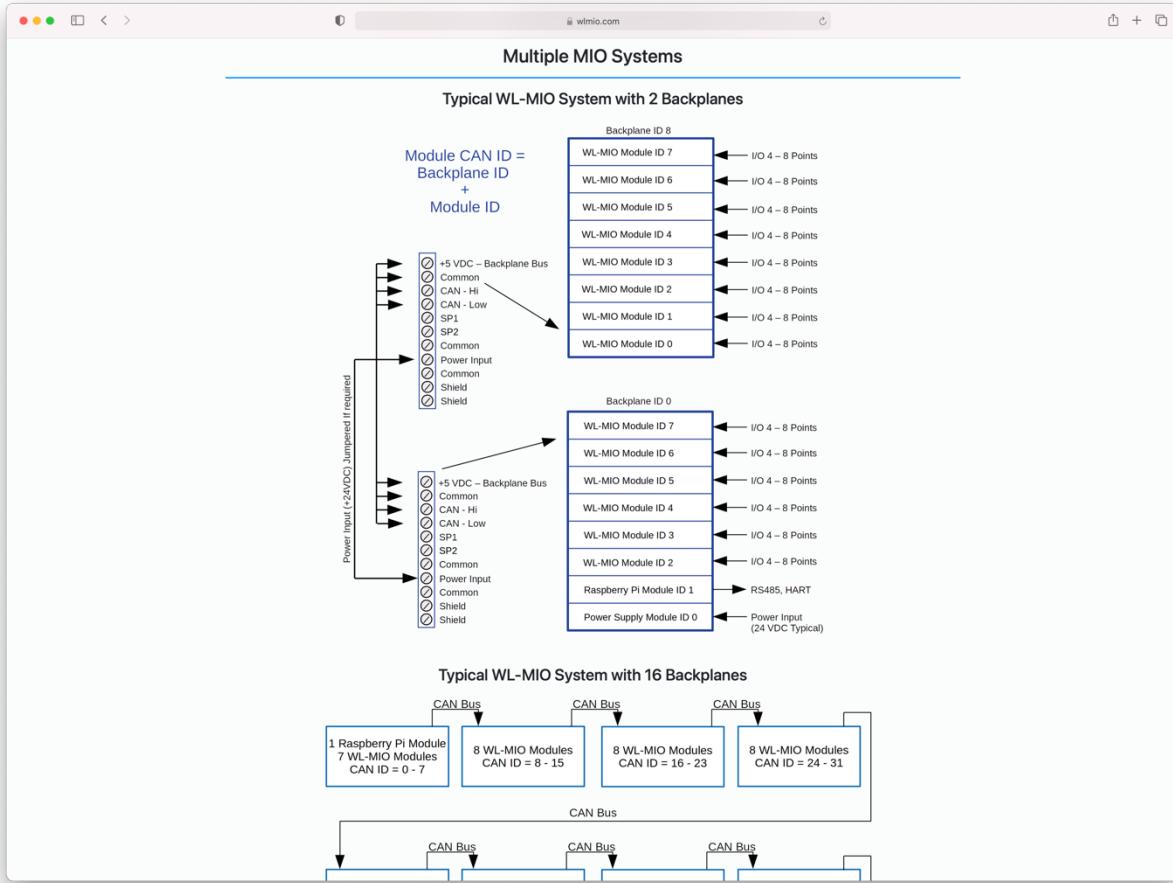
Each Module has 3 SHIELD Connections

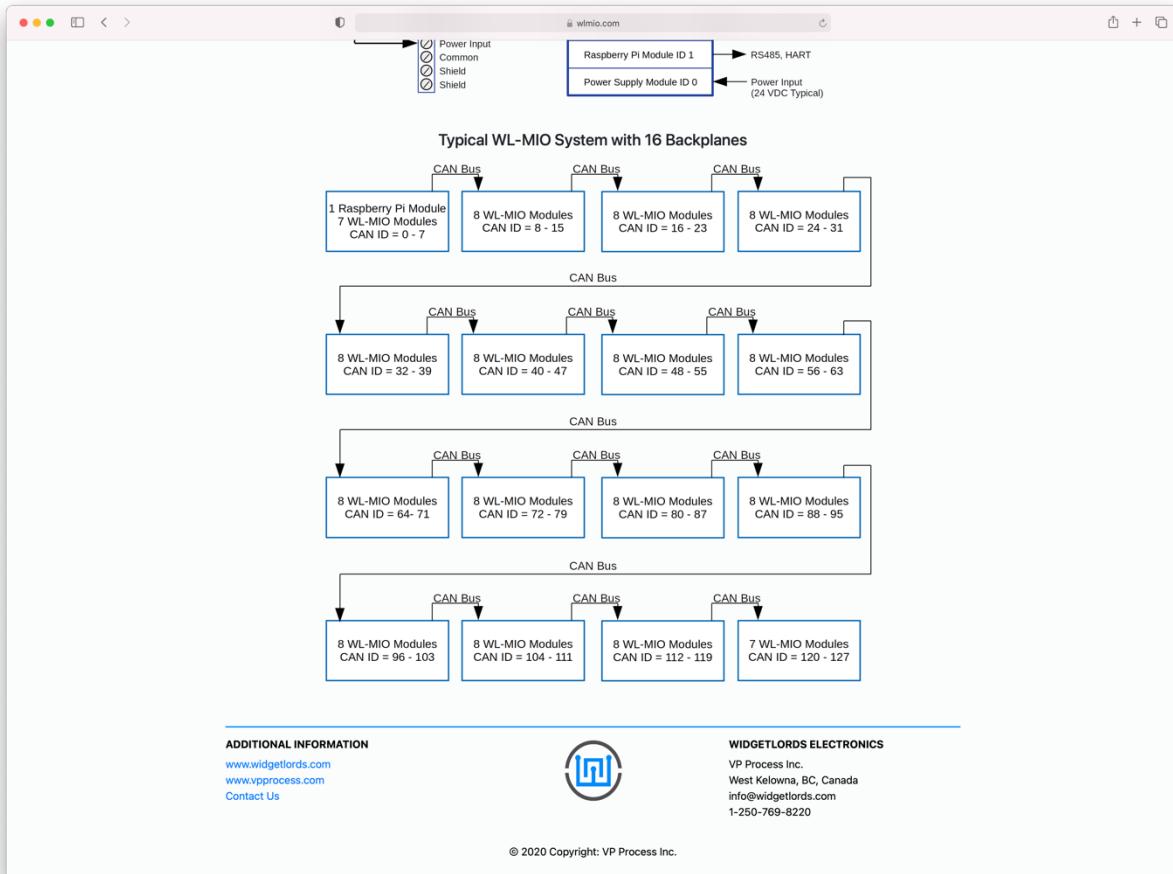
Terminal Blocks 3 Lever C/w Screw - Rising Cage Clamp

Each Module has 12 I/O Terminal Block Connections









Specs

WL-MIO Multipurpose I/O Process Controller

WIDGETLORDS ELECTRONICS

Home Description Configuration Specs Applications About Us

Specifications

Part No	Component	Module	Description	Ordering
VPE-6000-C-N	Backplane	Backplane	Backplane PCB Naked Version , complete with DIN Clips, and Card Guides	Ordering
VPE-6000-C-E	Backplane	Backplane Enclosed	Backplane PCB complete with Metal Enclosure, DIN Clips, Card Guides, and Sides	Ordering
VPE-6040-B	Input	Analog Input SDAFE mA & VDC Module 4 Channel	4 Channel Analog Input Module SDAFE (mA and VDC), 15 Bit	Ordering
VPE-6040-C	Processor	Raspberry Pi 4 & RS-485 Carrier Module	Raspberry Pi Carrier module c/w RS485 (RPI 4 NOT included)	Ordering
VPE-6020-C-H	Processor	Raspberry Pi 4, RS-485, & HART Carrier Module	Raspberry Pi Carrier module c/w RS485 and HART Modem (RPI 4 NOT included)	Ordering
VPE-6025-A	Processor	Raspberry Pi 4 & RS-485 Carrier Processor Kit	Raspberry Pi 4 Processor Kit & RS-485	Ordering
VPE-6025-B	Processor	Raspberry Pi 4, RS-485, & HART Carrier Processor Kit	Raspberry Pi 4 Processor Kit, RS-485, & HART	Ordering
VPE-RP4-B-2GB	Processor	Raspberry Pi 4 Model B 2GB	Raspberry Pi 4 Model B c/w SD Card	Ordering

- Do not permit **Part No** to wrap
- Move **Part No** column between **Description** and **Ordering** column.
- Remove “Naked Version”

ADDITIONAL INFORMATION

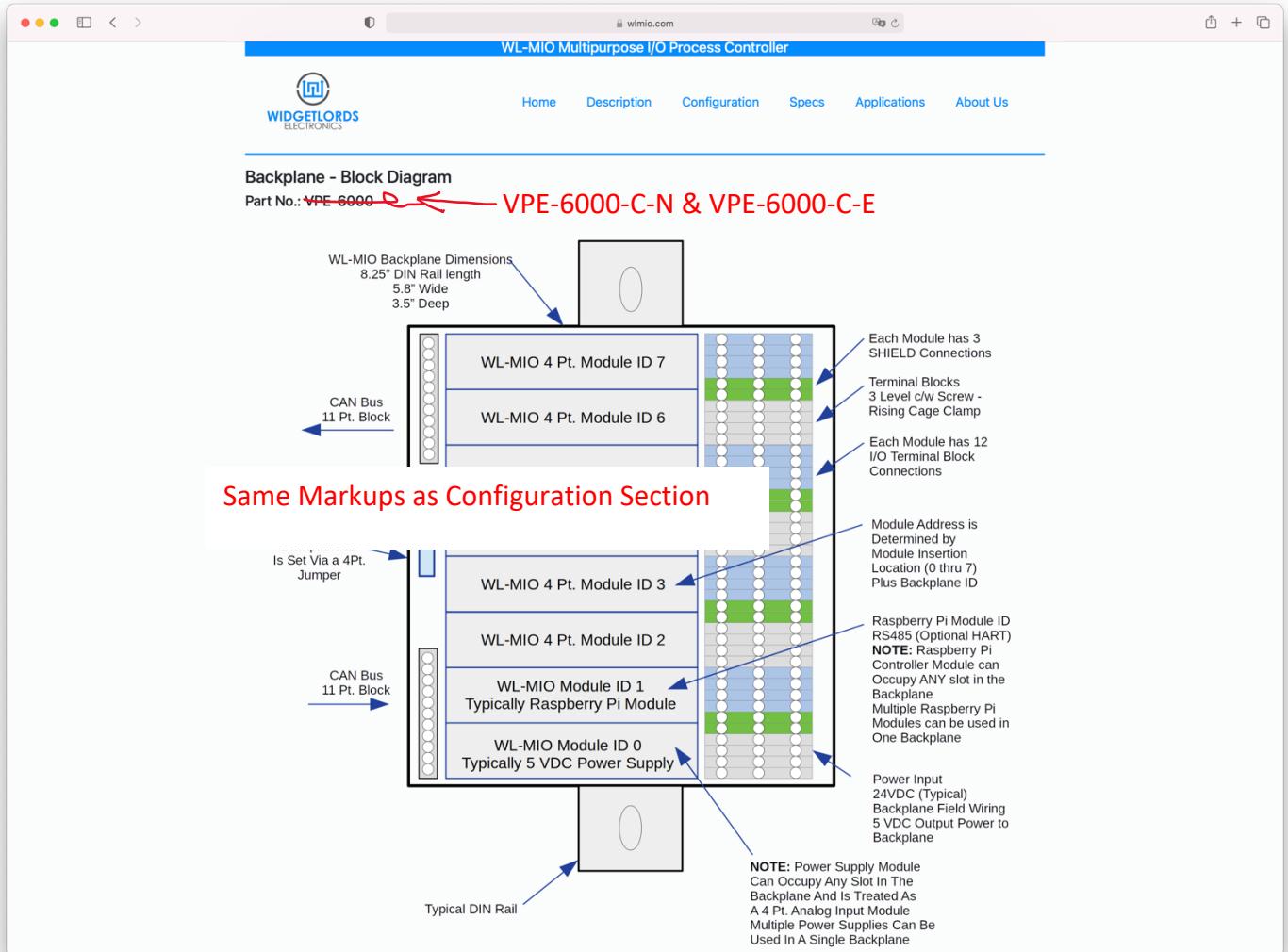
www.widgetlords.com
www.vpprocess.com
[Contact Us](#)

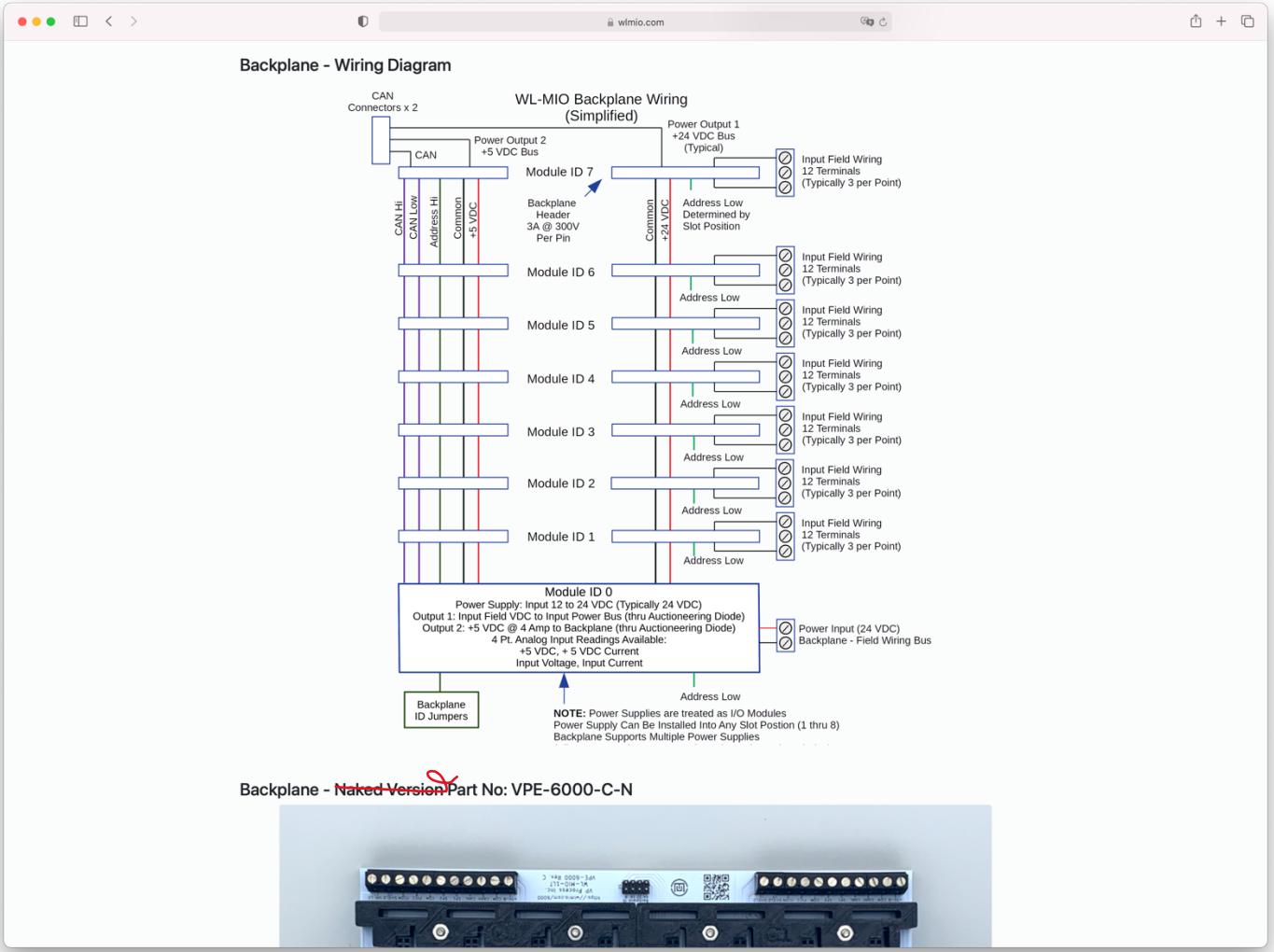


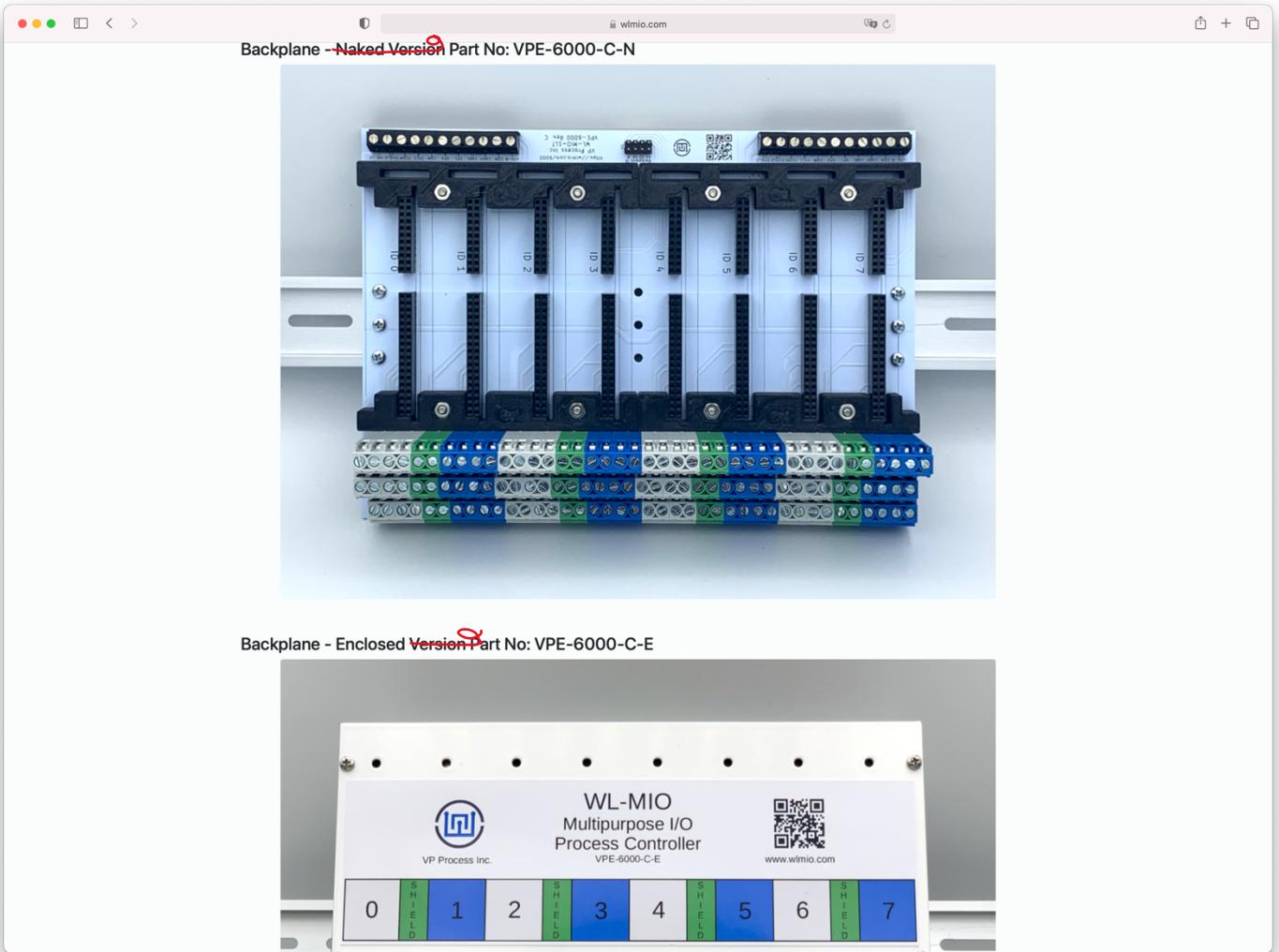
WIDGETLORDS ELECTRONICS
 VP Process Inc.
 West Kelowna, BC, Canada
info@widgetlords.com
 1-250-769-8220

© 2020 Copyright: VP Process Inc.

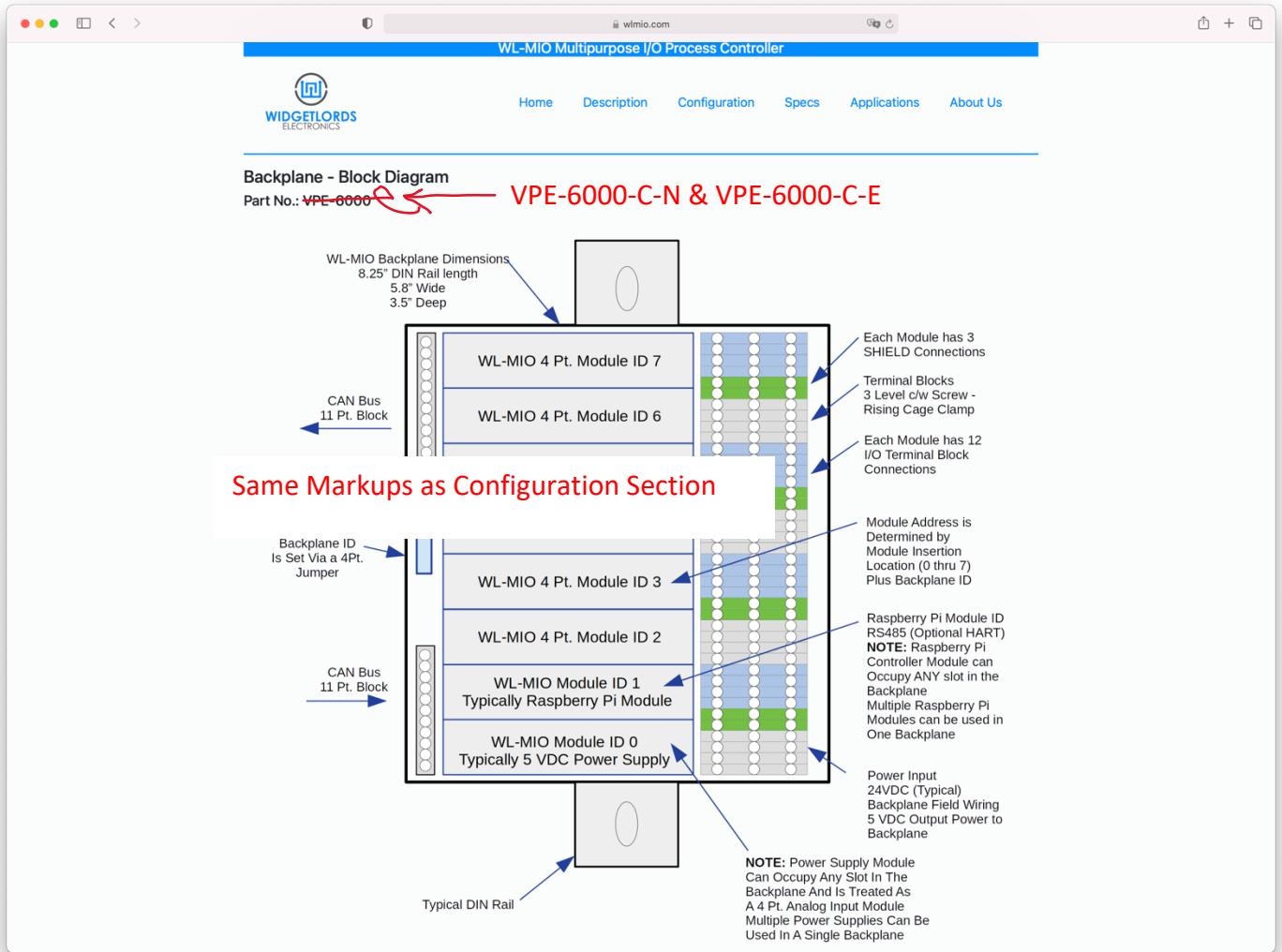
VPE-6000-C-N

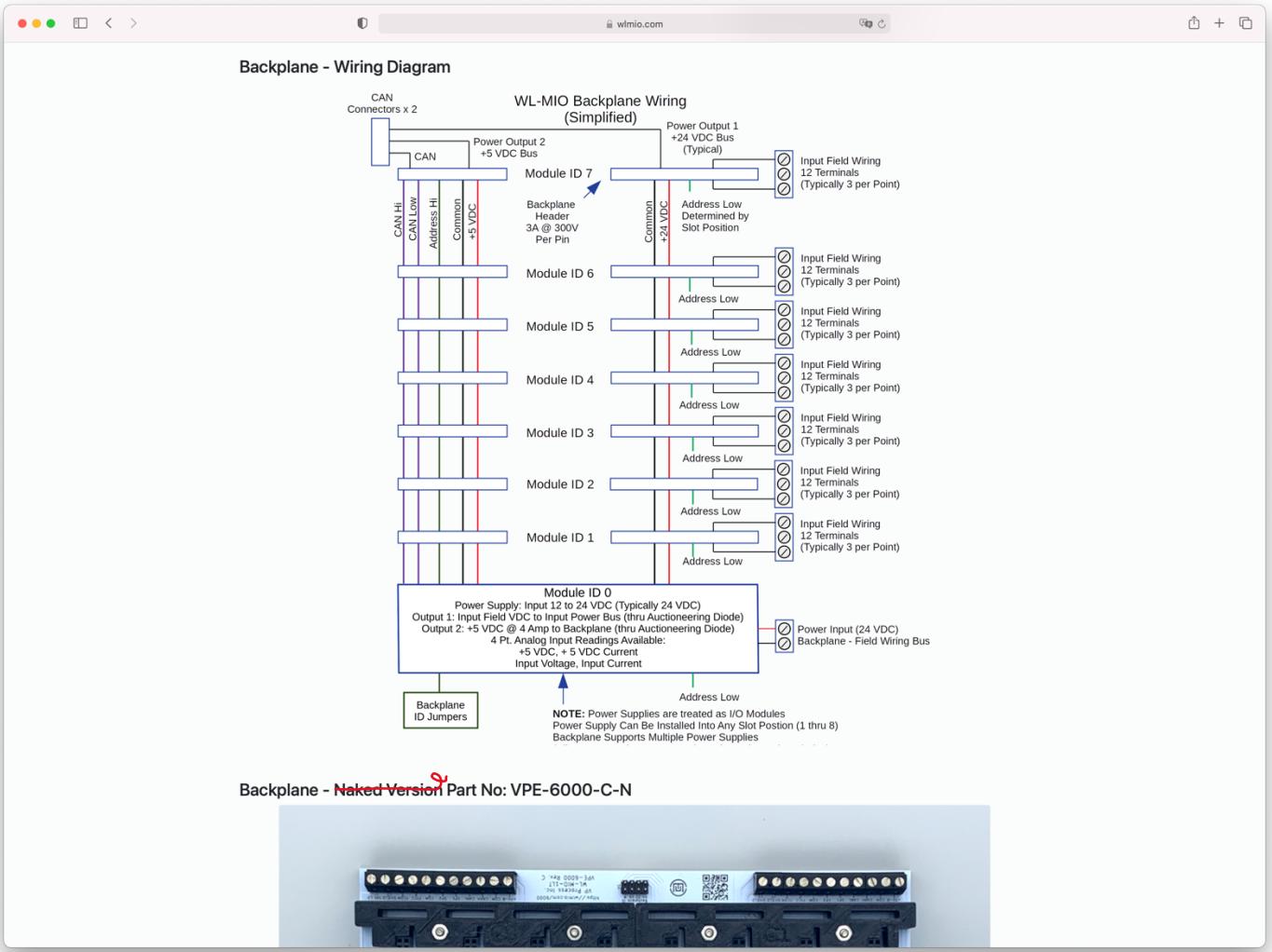


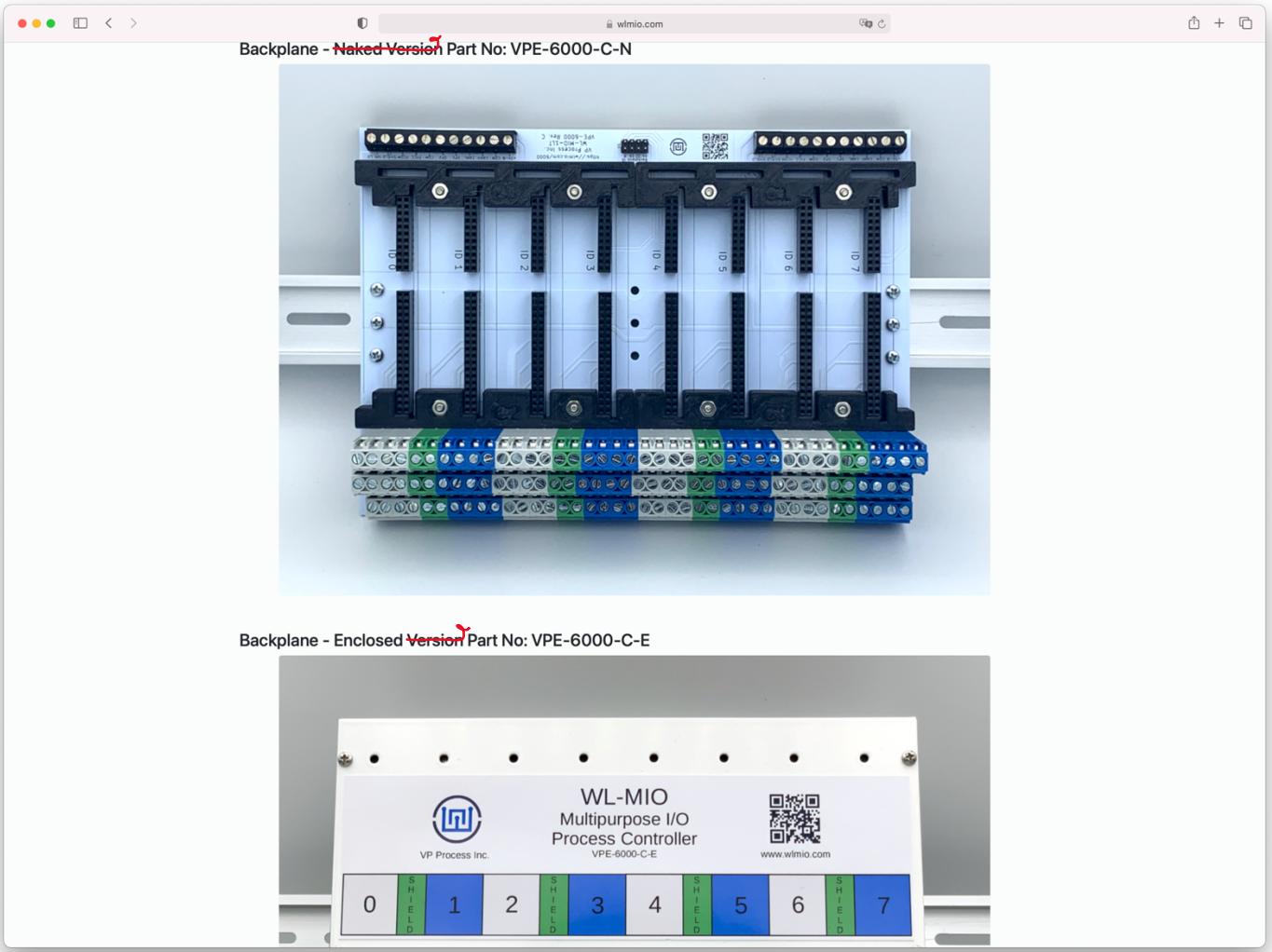




VPE-6000-C-E







Backplane - Enclosed Version Part No: VPE-6000-C-E

WL-MIO
Multipurpose I/O
Process Controller
VPE-6000-C-E

VP Process Inc.

www.wlmio.com

0 1 2 3 4 5 6 7

SHIELD SHIELD SHIELD SHIELD SHIELD SHIELD SHIELD

ADDITIONAL INFORMATION

www.widgetlords.com
www.vpprocess.com
[Contact Us](#)

WIDGETLORDS ELECTRONICS

VP Process Inc.
West Kelowna, BC, Canada
info@widgetlords.com
1-250-769-8220

© 2020 Copyright: VP Process Inc.

Backplane Enclosed Version Part No: VPE-6000-C-E

WL-MIO
Multipurpose I/O
Process Controller
VPE-6000-C-E

VP Process Inc.

www.wlmio.com

0 1 2 3 4 5 6 7

SHIELD SHIELD SHIELD SHIELD SHIELD SHIELD SHIELD SHIELD

ADDITIONAL INFORMATION

www.widgetlords.com
www.vpprocess.com
[Contact Us](#)

WIDGETLORDS ELECTRONICS

VP Process Inc.
West Kelowna, BC, Canada
info@widgetlords.com
1-250-769-8220

© 2020 Copyright: VP Process Inc.

VPE-6040-B

wlmio.com

WL-MIO Multipurpose I/O Process Controller

**WIDGETLODGS
ELECTRONICS**

Home Description Configuration Specs Applications About Us

Field Connections Block Diagram Layout Specifications

Analog Input SDAFE mA & VDC Module
4 Channel
Part No: VPE-6040-B

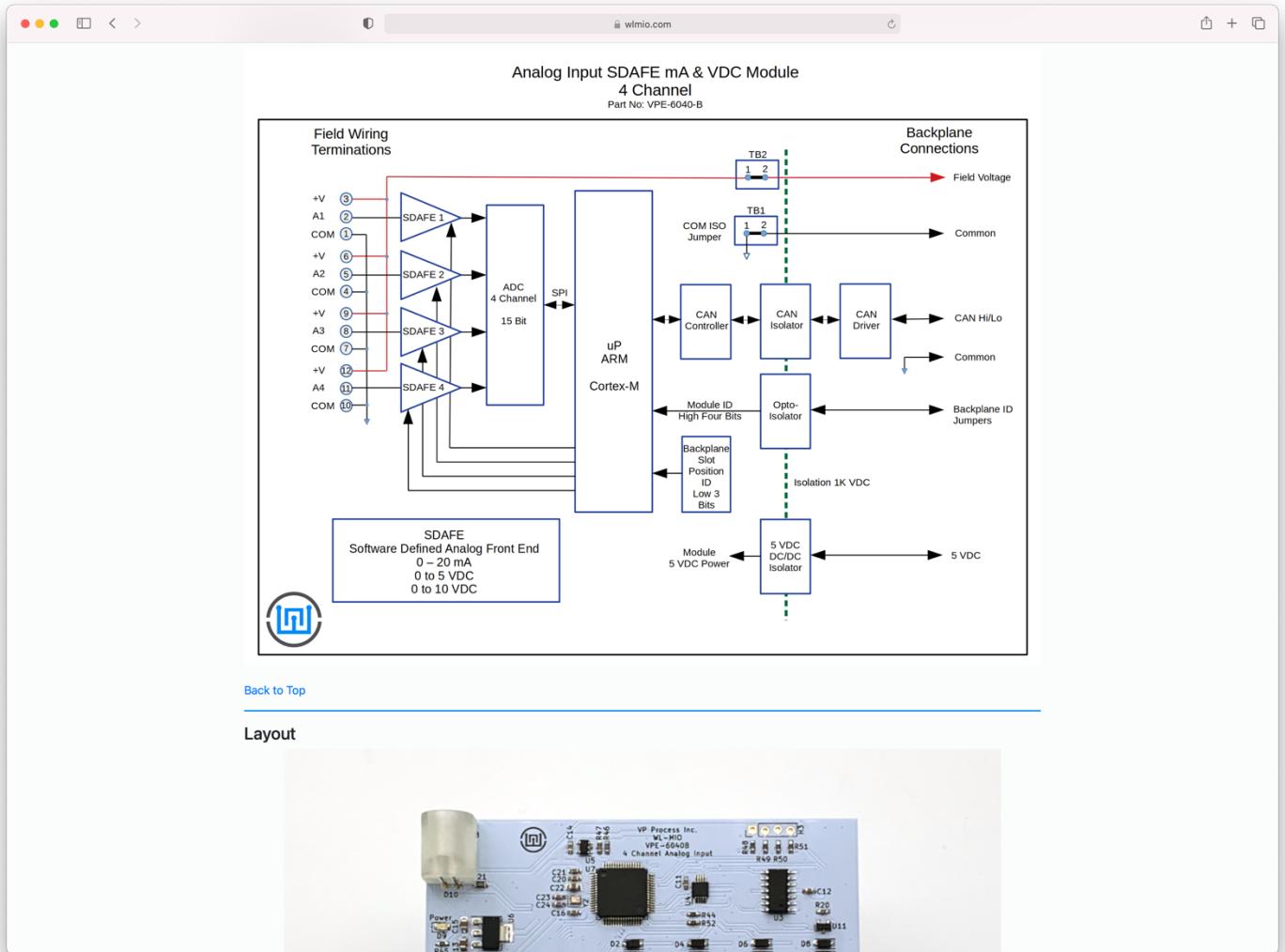
Field Connections

+V	3
A1	2
COM	1
+V	6
A2	5
COM	4
+V	9
A3	8
COM	7
+V	12
A4	11
COM	10

Block Diagram

Analog Input SDAFE mA & VDC Module
4 Channel
Part No: VPE-6040-B

Field Wiring Terminations TB2 Backplane Connections



Layout

[Back to Top](#)

Specifications

Item	Metric	Value
I/O	Part Name :	Analog Input SDAFE mA &VDC Module 4 Channel
	Part Number :	VPE-6040-B
	Channels :	4
	Input Range (per channel) :	0 - 20 mA , 0 to 10 VDC
	Over-range limits :	24 mA, 12 VDC
	Max. Survivable Input :	24 mA, 12 VDC
	Resolution :	32767 AD Counts (15 bit)
	Accuracy :	+/- 0.01% mA, +/- 0.01% VDC

wlmio.com

Specifications		
Item	Metric	Value
I/O	Part Name :	Analog Input SDAFE mA &VDC Module 4 Channel
	Part Number :	VPE-6040-B
	Channels :	4
	Input Range (per channel) :	0 - 20 mA , 0 to 10 VDC
	Over-range limits :	24 mA, 12 VDC
	Max. Survivable Input :	24 mA, 12 VDC
	Resolution :	32767 AD Counts (15 bit)
	Accuracy :	+/- 0.01% mA, +/- 0.01% VDC
	Input Voltage Drop nominal :	5 VDC at 20 mA per channel
	Sample Rate :	Programmable - 512 ms Default
Processor	Processor :	STM32 Series
Field Connections	Utilized Backplane Terminal Qty :	12
	Method :	Screw, Rising Cage Clamp
	Torque :	0.753 N·m (4.3 Lb-in)
	Screw :	M3
	Voltage Rating :	300 VAC
	Current Rating :	15 A
	Withstanding Voltage :	1.6 KV
	Cross section solid conductor AWG min :	28
	Cross section solid conductor AWG max :	12
	Cross section stranded conductor AWG min :	28
	Cross section stranded conductor AWG max :	12
	Stripping Length :	6-7 mm
Physical	Length :	86.36 mm
	Width :	76.96 mm
	Height (Above backplane) :	78.74 mm
	Weight :	38 g
	Weight, Shipping (Qty. 1) :	100 g
Electrical	Input Voltage Range (WL-MIO BUS) :	5 VDC
	Current max :	80 mA
	Current typical :	75 mA
	Power max :	400 mW
	Power typical :	375 mW
BUS to Logic Isolation (working) :		1000 VDC

		wilmio.com
Voltage Rating :	300 VAC	
Current Rating :	15 A	
Withstanding Voltage :	1.6 KV	
Cross section solid conductor AWG min :	28	
Cross section solid conductor AWG max :	12	
Cross section stranded conductor AWG min :	28	
Cross section stranded conductor AWG max :	12	
Stripping Length :	6-7 mm	
Physical	Length :	86.36 mm
	Width :	76.96 mm
	Height (Above backplane) :	78.74 mm
	Weight :	38 g
	Weight, Shipping (Qty. 1) :	100 g
Electrical	Input Voltage Range (WL-MIO BUS) :	5 VDC
	Current max :	80 mA
	Current typical :	75 mA
	Power max :	400 mW
	Power typical :	375 mW
	BUS to Logic Isolation (working) :	1000 VDC
	BUS to Logic Isolation (transient) :	1000 VDC
	Field to Logic Isolation (working) :	1000 VDC when TB1 Jumpers removed
	Field to Logic Isolation (transient) :	1000 VDC when TB1 Jumpers removed
Ambient	Operating Temperature :	-40 to +85 °C
	Storage Temperature :	-40 to +85 °C
	Operating Relative Humidity (non-condensing) :	5 to +95 %RH
	Storage Relative Humidity (non-condensing) :	0 to +95 %RH
Warranty	Limited Liability :	Product Replacement 1 Year

[Back to Top](#)

ADDITIONAL INFORMATION	WIDGETLORDS ELECTRONICS
www.widgetlords.com	VP Process Inc.
www.vpprocess.com	West Kelowna, BC, Canada
Contact Us	info@widgetlords.com
	1-250-769-8220

© 2020 Copyright: VP Process Inc.

VPE-6080-B

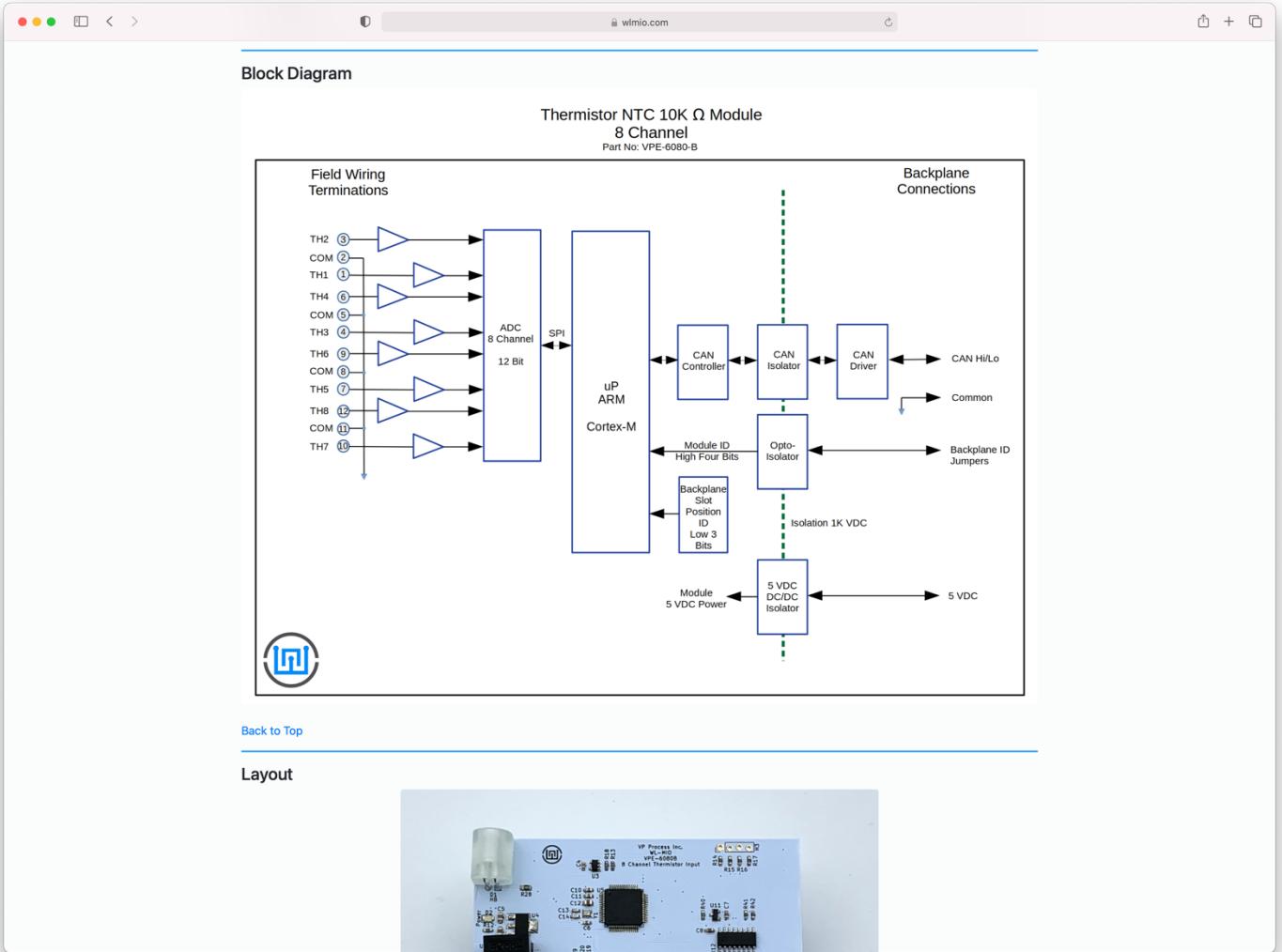
wilmio.com

Field Connections Block Diagram Layout Specifications

Thermistor NTC 10K Ω Module
8 Channel
Part No: VPE-6080-B

Field Connections

Field Connections



wilmio.com

```
graph LR; Input[5VDC] --> Isolator[DC/DC Isolator]; Isolator --> Module[Module 5VDC Power]
```

[Back to Top](#)

Layout

[Back to Top](#)

Specifications

[Back to Top](#)

ADDITIONAL INFORMATION

www.widgetlords.com
www.vpprocess.com
[Contact Us](#)

WIDGETLORDS ELECTRONICS

VP Process Inc.
West Kelowna, BC, Canada
info@widgetlords.com
1-250-769-8220

© 2020 Copyright: VP Process Inc.

VPE-6060-B

wlmio.com

Field Connections

Block Diagram Layout Specifications

Digital Input Discrete, Frequency, & Pulse Module 4 Channel
Part No: VPE-6060-B

Field Connections

+V	3
D1	2
COM	1
+V	6
D2	5
COM	4
+V	9
D3	8
COM	7
+V	12
D4	11
COM	10

Block Diagram

Digital Input Discrete, Frequency, & Pulse Module 4 Channel
Part No: VPE-6060-B

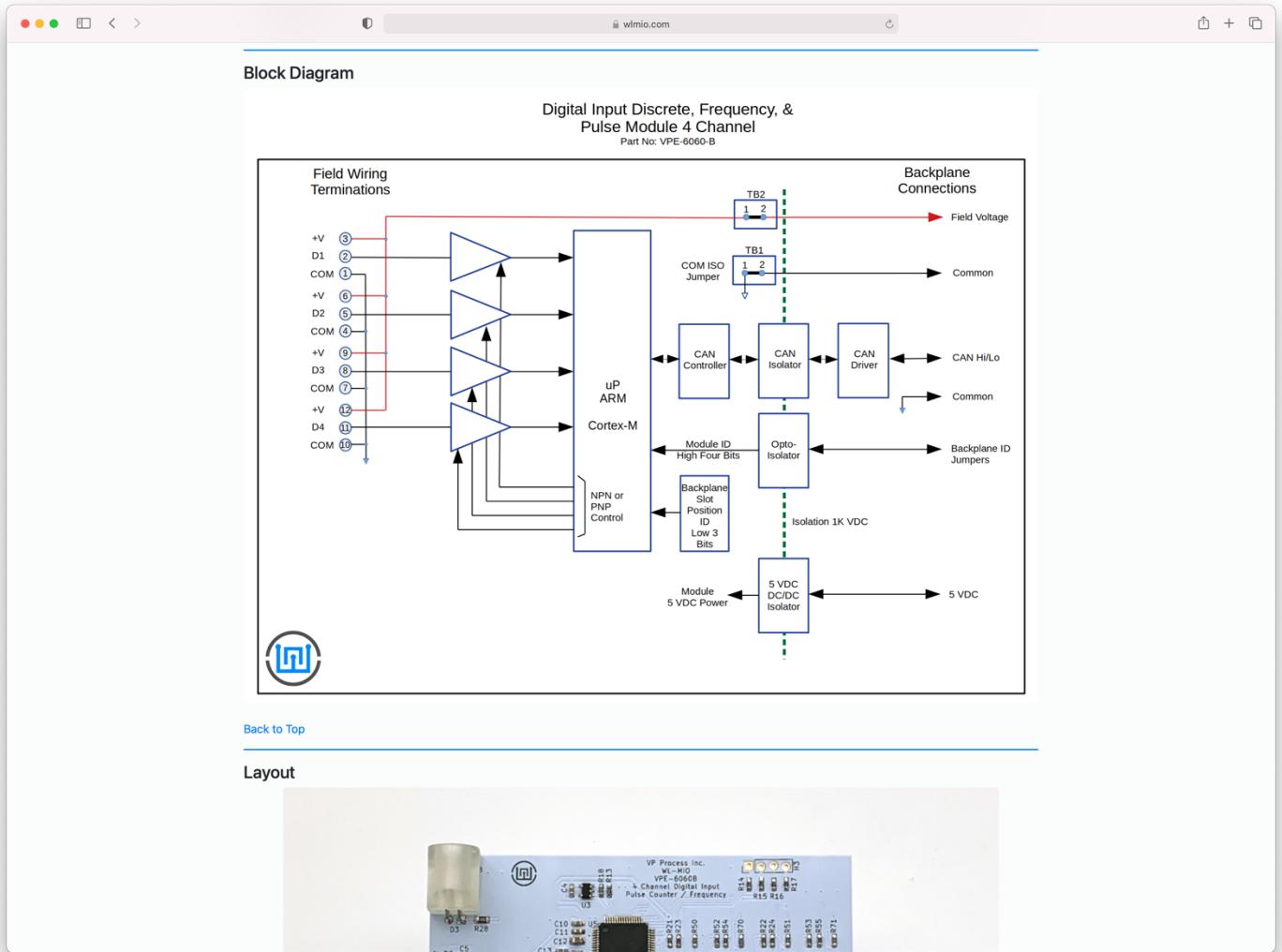
Field Wiring Terminations

Backplane Connections

Field Voltage

Common

Field ISO Jumper



wilmio.com

Layout

[Back to Top](#)

Specifications

[Back to Top](#)

ADDITIONAL INFORMATION

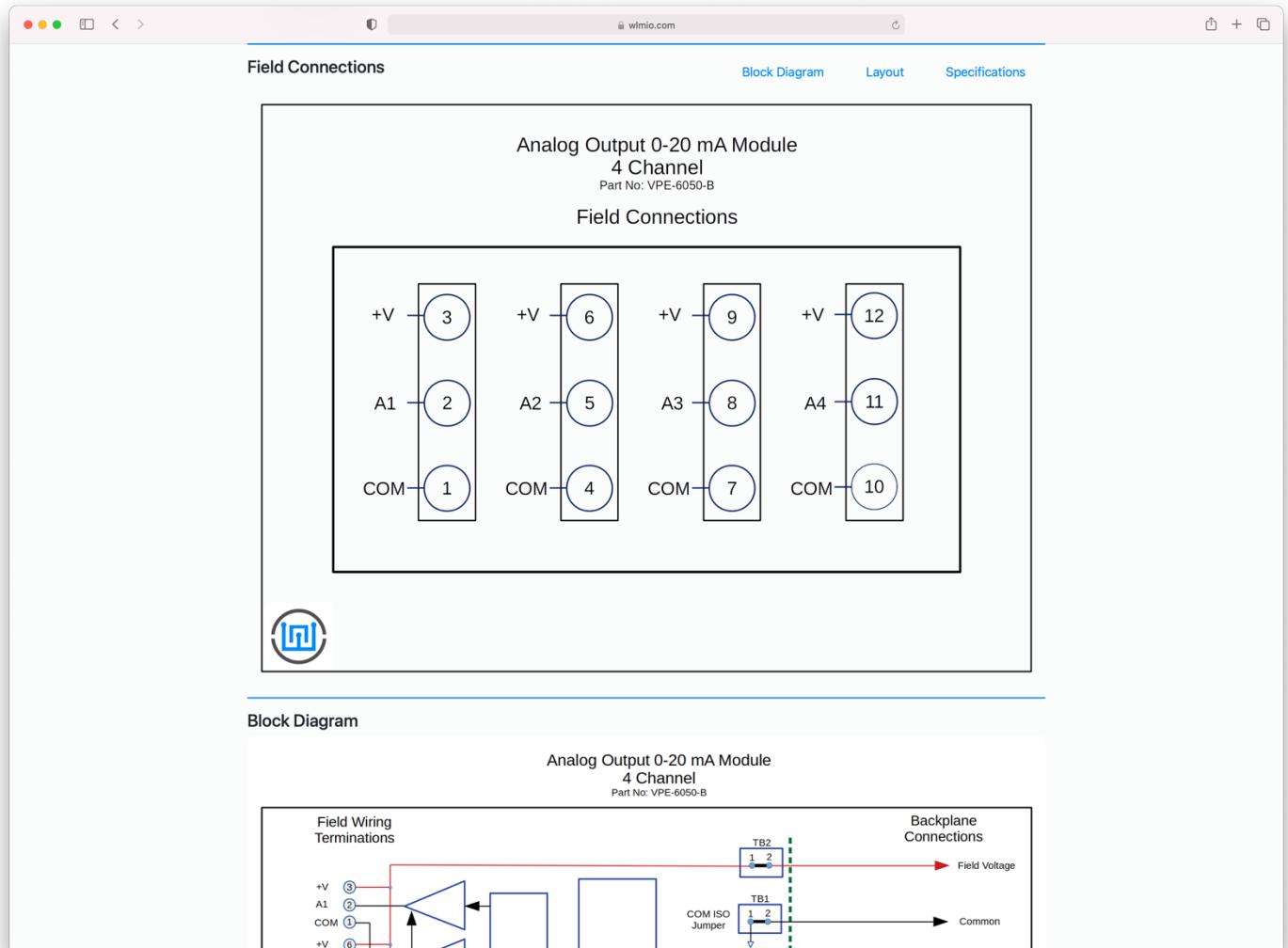
www.widgetlords.com
www.vpprocess.com
[Contact Us](#)

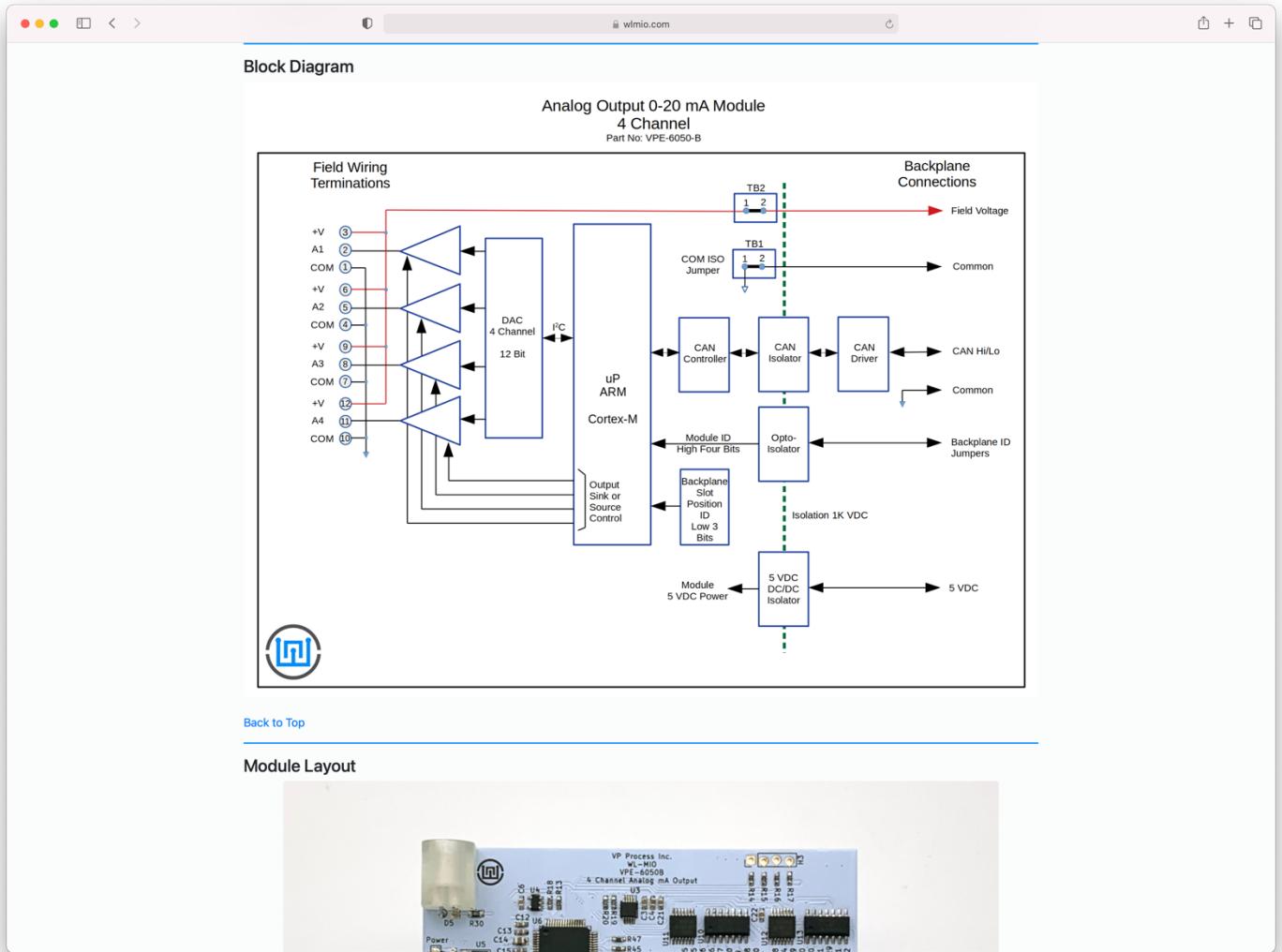
WIDGETLORDS ELECTRONICS

VP Process Inc.
West Kelowna, BC, Canada
info@widgetlords.com
1-250-769-8220

© 2020 Copyright: VP Process Inc.

VPE-6050-B





wilmio.com

Module Layout

[Back to Top](#)

Specifications

[Back to Top](#)

ADDITIONAL INFORMATION

www.widgetlords.com
www.vpprocess.com
[Contact Us](#)



WIDGETLORDS ELECTRONICS

VP Process Inc.
West Kelowna, BC, Canada
info@widgetlords.com
1-250-769-8220

© 2020 Copyright: VP Process Inc.