Data Sheet

DP-40044-01-000

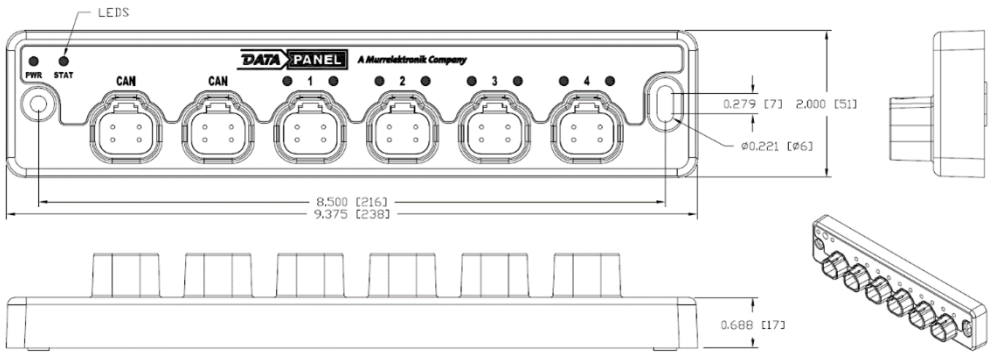
xtremeDBm

XDBM0404-ADI-PWM

I/O Module
Digital and Analog

J1939 CANbus

8…32 V DC



Technical Data	
Housing	*Molded glass-filled nylon*
Dimensions (l x w x h)	*2.000 x 9.375 x 1.34 in (51 x 239 x 34 mm)*
Weight	*0.66 lbs (0.30 kg)*
Installation (mounting hardware not included)	*Screw: 2 x #10 (2 x M5)* *Torque: 21 in-lbs (2.4 Nm) max.*
Mating Connectors and Accessories *DEUTSCH® size 16 Socket* *DEUTSCH® Seal Plug*	*4 Pole Plug 10 x DT06-4S or equivalent* *0462-201-16141 (16 – 20 AWG)* *1062-16-0122 (14 – 18 AWG)* *114017*
Operating Voltage	*8…32 V DC protected against reverse polarity without need for external fuse*
Operating Current	*13 Amps node current max with one POWER pin* *16 Amps node current max with two POWER pins* *4 Amps continuous per output pin max.*
Communication Interface and Baud Rate	*2 parallel J1939 ports 250kb (default) & 500kb*
Source Address	*Base Address 217d (0xD9h) Offset 0…7*
Total Inputs and Outputs	*8 (4 x Inputs & 4 x 4 Amp Outputs)*
Inputs Diagnostics	*Out of range and sensor power overcurrent*
Outputs Diagnostics	*Short circuit and overcurrent*
Output Port Parallelling Capability	*Supported up to 8 Amps*
Output Port H-Bridge Capability	*Supported up to 4 Amps*
Output (Sensor Power)	*2 (VBAT @ 1 Amp max.* **or** *5 V DC @ 200 mAmp max. per port, individually configurable)*
Operating Temperature	*-40…85 °C*
Storage Temperature	*-40…85 °C*
Protection Class	*IP67: Connector seal plugs required for unused pins* *Sealing plugs required for unused ports* *IP68/IP69K: Using Murrelektronik MDC xtreme cables*

Rev.	Description	Date	Name		Date	Name
				Originator	3.26.24	AH
				Approved		
c	DCN G319	02.20.25	MH			
a	Initial draft	03.26.24	AH	DP-40044-01-000_db_e_c		

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Art. No.: DP-40044-01-000

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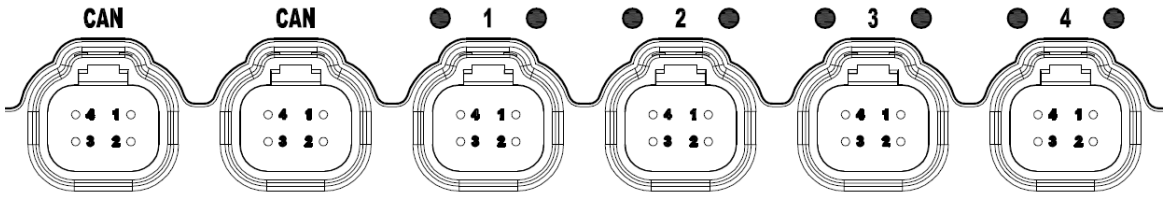
Connector Interface



Connections:
Ports CAN
Pin 1 = POWER
Pin 2 = CAN HIGH
Pin 3 = GND-EXT
Pin 4 = CAN LOW

Connections:
OUTPUT Ports J1 – J2
Pin 1 = GROUND
Pin 2 = OUTPUT B
Pin 3 = GROUND
Pin 4 = OUTPUT A

Connections:
INPUT Ports J3 – J4
Pin 1 = SENSOR PWR
Pin 2 = INPUT B
Pin 3 = GROUND
Pin 4 = INPUT A

Operating States (LEDs)	*Color*	*Status*
PWR	*Blue*	*Module and Ports power are connected*
STAT	*Green*	*Module and Communication status good*
	Yellow	*Warning Status*
	Red	*Fault Status*
I/O Port	*Yellow*	*Left LED – Input A / Output A* *Right LED – Input B / Output B*

Characteristics of the OUTPUT ports

Outputs
Port J1: B, A
Port J2: B, A

Digital Output
Output voltage — *8…32 V DC*
Switching current — *4 Amps*

PWM & PWM(i) Current Controlled Output
PWM frequency — *40-1100 Hz*
PWM(i) frequency — *100-700 Hz*
Switching current — *4 Amps*

Default configuration — *Digital 4 Amps*

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Characteristics of the INPUT ports	
Inputs Digital *Port J3: B, A* *Port J4: B, A*	*<u>Positive switching</u>* *Input A threshold* — *> 1.6 V DC* *Input B threshold* — *> 1.6 V DC* *Input resistance* — *10 kΩ* *Input response* — *20 mSec* *<u>Ground switching</u>* *Input A threshold* — *< 1.6 V DC* *Input B threshold* — *< 1.6 V DC* *Input resistance* — *10 kΩ* *Input response* — *20 mSec* *<u>Frequency/Encoder Mode Port 3A & Port 4A</u>* *Positive switching* — *>1.6 V DC* *Frequency* — *0-5000 Hz* *<u>Default configuration</u>* — *Positive switching*
Inputs Analog *Port J3: B, A* *Port J4: B, A*	*<u>Analog Input</u>* *Resolution* — *12 bit* *Accuracy* — *1% Full Scale* *Input response* — *20 mSec* *<u>5 V DC Mode</u>* *Input voltage* — *0…5 V DC* *Input resistance* — *166 kΩ* *Input fault limit* — *> 5.5 V DC* *<u>10 V DC Mode</u>* *Input voltage* — *0…10 V DC* *Input resistance* — *55 kΩ* *Input fault limit* — *> 11.0 V DC* *<u>32 V DC Mode</u>* *Input voltage* — *0…32 V DC* *Input resistance* — *37.6 kΩ* *Input fault limit* — *> 35.0 V DC* *<u>4-20 mA Mode</u>* *Input current* — *0-25 mA* *Input resistance* — *162 Ω* *Input fault limit* — *>25 mA* *<u>Ratiometric Mode</u> (Only on B Channels)* *Input voltage* — *0…32 V DC* *Resolution* — *0.1% (0 – 100.0%)* *Input resistance* — *37.6 kΩ*

Test Standards and Regulation	
Electrical test	*EMC Immunity to ISO 13766-1:2018, ISO 13766-2:2018, EN 13309:2010* *EMC Emissions to ISO 13766-1:2018, ISO 13766-2:2018, EN 13309:2010* *Conducted Transients to ISO 13766-1:2018, ISO 13766-2:2018, ISO7637-2:2011, Annex A*

Application Notes	
POWER *GND-EXT*	*Module battery power and negative return. In a module application with < 13 Amps one GND-EXT and one POWER CAN port pin may be used for the battery circuit connections. In a module application with 13 Amps to 16 Amps both CAN port GND-EXT and POWER pins are used for the battery circuit connections. All module GND-EXT nodes are internally linked to GROUND.*
Port J1 – J4 *GROUND*	*The module provides reverse battery protection for all external components connected to the ports J1 – J4 without the need of an external fuse. Any device connected to the module ports J1 – J4 shall have the device ground connection made at the port and not on the machine or chassis. All module GROUND nodes are internally linked to GND-EXT.*

Article Numbers	
DP-40044-01-000	XDBm0404-DIO J1939 Slave Module

Rev.	Description	Date	Name		Date	Name
				Originator	3.26.24	AH
				Approved		
				DATA PANEL A Murrelektronik Company		
c	DCN G319	02.20.25	MH			
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