

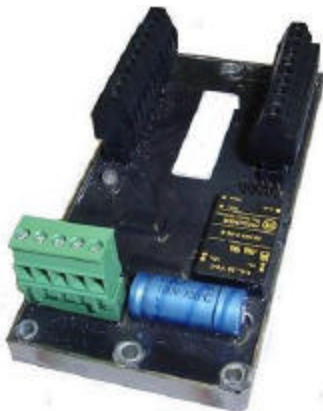
8 Point High Current PWM Output Module



DN001-PFE



DN001-SSE



DN001-OFE

The Electronic Innovation Inc. "DN" line of modules is intended to provide rugged, reliable, *DeviceNet*[™] I/O capability in unusually harsh environments. These include applications such as on-board control of heavy mobile equipment.

The DN line has been designed from the ground up to survive these environments with special attention in the following areas:

- Mechanical design for high shock, vibration, and concussion tolerance, resistance to liquids such as water or oil, and most forms of corrosion, along with wide operating temperature ranges.
- Electrical design to ensure reliable operation in the face of severe electrical transients, which can occur on vehicle electrical systems. All modules have been designed and tested according to automotive standard SAE J1113 and mil spec QSTAG-307
- Electronic design to minimize electromagnetic emissions and provide low susceptibility to external electromagnetic interference.
- Extensive design effort has been expended to ensure that hardware, software, or network faults, if and when they occur, will result in a predictable and timely transition of the module to the safest achievable state.

The DN001 *DeviceNet*[™] High Current Pulse Width Modulated (PWM) Analog Output Module provides eight outputs, which are well suited to provide high-side control of heavy inductive vehicle loads such as the solenoids that are used for proportional electric control over hydraulic systems. The duty cycle of these outputs may be varied from true 0% to true 100% allowing them to also be used as discrete digital outputs. The wide PWM frequency range available permits operation with a range of available equipment from many manufacturers.

In addition to the usual *DeviceNet*[™] parameters, the characteristics of the Pulse Width Modulated (PWM) outputs are also software adjustable through the bus. The most common characteristic is the frequency of the PWM output signal. This can be set to match the requirements of the equipment being driven by the output.

DeviceNet Communications

Default MAC ID:	63, Software Selectable
Data Rates Supported:	125, 250, 500 kbps, Software Selectable
Master/Slave Connection Set:	Supported, Group 2 Only Server
Dynamic Connections (UCMM):	Not Supported
Fragmented Explicit Messaging:	Not Supported

DeviceNet Power Supply:

Power Supply Voltage:	9 V to 65 V, continuous operating
Power Supply Isolation:	1.2 kV rms
Current Consumption:	200 mA @ 8.8 V Supply 150 mA @ 11.0 V Supply 80 mA @ 25.0 V Supply
Overvoltage Withstand:	120V, 20 seconds
Applicable Standards:	Exceeds QSTAG-307 & SAE 1113

Aux Power Supply

Operating Voltage:	4.5 to 39 VDC
Maximum Operating Current:	18 A Total
Reverse Polarity Protection:	Series Diode
Overvoltage Withstand:	Max. 120V, indefinite duration
Operation During Overvoltage:	Outputs turned off to protect load when Aux. Supply > max. operating voltage
Applicable Standards:	Exceeds QSTAG-307 & SAE 1113

Pulse Width Modulated (PWM) Outputs

Output Type:	High-Side Switch
PWM Frequency:	20 to 2500 Hz, Software Selectable
PWM Frequency Jitter:	100 ppm
PWM Resolution:	8 bits
PWM Duty Cycle Range:	0% to 100%
Overvoltage Shutdown:	39.5 to 42 VDC
Undervoltage Shutdown:	2.4 to 4.5 VDC
Operating Current:	5 A Max per output, 18 A Max Total
Overcurrent Protection:	Auto Reset Electronic Fuse
Overcurrent Trip Point:	7 to 35 A Initial Peak 6 to 10 A Repetitive
Overcurrent Shutdown Delay:	80 μ s Min 400 μ s Max
Thermal Overload Trip Temp:	150°C Min
Inductive Spike Protection:	Output clamped at 42 VDC, 1500W max. pulse
State of Outputs on Power Up:	All outputs off.
DeviceNet State Behavior:	All outputs immediately turned off any time the module is not in Established state.

Environmental

Operating Temperature:	-40 °C to +85 °C
Storage Temperature:	-55 °C to +125 °C

Ordering Information

DN001-OFE	Potted into Open Frame stainless steel tray, Terminal block connectors
DN001-PFE	Potted into Polyurethane Enclosure, Mini-style DeviceNet and Aux. Connectors
DN001-SSE	Micro-Style connectors for outputs Potted into Stainless Steel Enclosure, Mini-style DeviceNet and Aux. Connectors Micro-Style connectors for outputs



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