

Chameleon PROFIBUS Network Interface Module (NIM-7)

High-Performance Programmable Controllers for Extreme Environments



KEY FEATURES

- Can be configured as a PROFIBUS DP Network Master or Slave
- High-Performance Dual-Processor Architecture
- Network speeds from 9.6 Kbps up to 12 Mbps
- Intuitive graphical application programming (Design Pad G3)
- Integrated PROFIBUS network configuration tool
- Fully Sealed Enclosure (NEMA 4X, 6P, 13 Protection)
- -40°C to +65°C (-40°F to +149°F) Operating Range
- MIL-STD-901D for High Impact Shock
- MIL-STD-167B for Vibration
- MIL-STD-461E for Electro-Magnetic Interference (EMI)
- Supports Hot Swapping

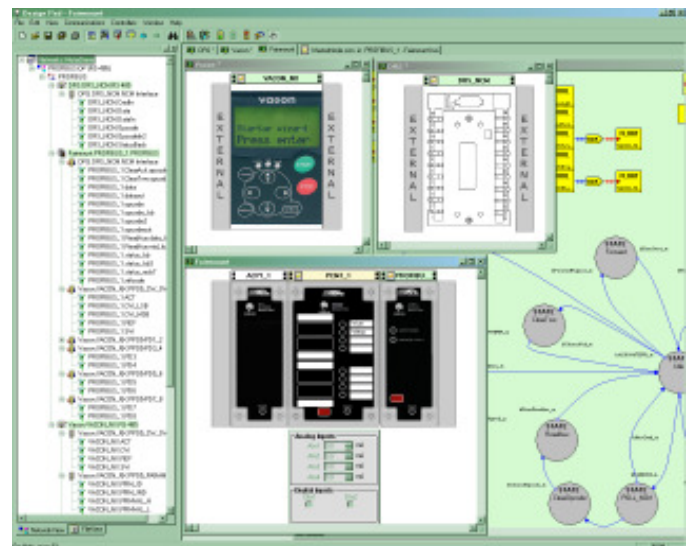
The Chameleon PROFIBUS Network Interface Module (NIM-7) provides seamless connectivity to PROFIBUS DP compliant devices. It features a high-performance 32-bit RISC processor with multi-tasking RTOS to execute computationally-intensive applications and to interface with other modules in the Chameleon family. Network message processing is offloaded to a co-processor containing an integrated Siemens ASPC-2 PROFIBUS controller.

Chameleon's multi-processor architecture allows considerable flexibility in the use of NIM-7 modules. They can serve as a standalone high-end remote I/O application processor node on a PROFIBUS network with connectivity to other inexpensive (and computationally-limited) slave devices. They can be arranged with other Chameleon I/O modules to create a high-end Programmable Automation Controller (PAC) solution. Or, they can be combined with other Chameleon networking modules to create a gateway between multi-protocol network segments or to create a bridge between multiple PROFIBUS segments (using the internal high-speed backplane to transfer data between modules). For example, the NIM-7 module can operate alongside a NIM-1 Modbus module, or NIM-6 LonTalk module, or NIM-5 Ethernet module executing a supported IP protocol (e.g. EtherNet/IP or PROFINET) to transfer data between networks.

You program the NIM-7 with the Design Pad G3 graphical configuration tool. Design Pad G3 enables you to create sophisticated remote control, local control, monitoring, and/or network message handling applications without prior programming experience. It also contains an integrated PROFIBUS network configuration tool with GSD import, as well as integrated off-line device network simulation capabilities for both Fairmount Automation devices and third-party products.

The NIM-7 operating-mode (master or slave) is software-configured—the module takes on the selected role during its initialization sequence. Using the same module for both functions can provide measurable logistics benefits and reduce procurement, maintenance, and training costs.

The firmware in all Chameleon modules can be updated in the field as new software features are released. For example, new PROFIBUS extensions (e.g., DPv2) could be added to the NIM-7 as they become available in the future, thereby protecting today's hardware investment from obsolescence.



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As with all Chameleon modules, NIM-7 units are hot-swappable: when a new module is inserted into a Chameleon node, its neighboring modules automatically transfer the program it is to execute—there is no need to shut off the power and there is no need to detach connectors. They also provide unequaled ruggedness. They are specifically designed for sustained operation in severe environments, including those characterized by extreme shock, vibration, electro-magnetic interference, temperature, and/or humidity. Its fully-sealed enclosure (sealing end-caps not pictured) allows the module to operate while submerged.

ENVIRONMENTAL CHARACTERISTICS

Operating Ambient Temperature Range	-40°C to 65°C
Storage/Transport Ambient Temperature Range	-40°C to 85°C
High Impact Shock	MIL-STD-901D
Mechanical Vibration	MIL-STD-167B
Electro-Magnetic Interference	MIL-STD-461E (Pending)
Facial/Housing Protection	NEMA 1,2,4,4X,5,6,6P,12,12K,13
Operating Humidity	100% RH, Condensing

ELECTRICAL CHARACTERISTICS

Maximum Power Consumption	4W
Main CPU	33 MHz 32-Bit ARM Core
Memory	1 MB SRAM, 1MB Non-Volatile Flash
Network capacity	125 PROFIBUS DP Devices
Baud rate	Standard PROFIBUS Rates up to 12Mbps
Signal Electrical Isolation from Control Circuitry	Opto-isolated, 1500 VDC Minimum
Biasing	Switchable 390Ω high and low side
Termination	Switchable 220Ω
External Voltage Source	Isolated 5 VDC, 12mA
Supported Cable Diameters / Wire Gauges	Two glands 0.24"-0.47" and two glands 0.16"-0.31" / 16-28 AWG

PROFIBUS PROTOCOL

Operating Modes	Class 1 Master or Slave
Controller	Siemens ASPC-2
Version Support	DPV0, DPV1 Extensions
Extensions	SYNC, FREEZE, ALARMS, DIAGNOSTICS, Class 2 Services, MPI Functions
Process Data Size	

	Master Mode	Slave Mode	
Input Block	3584 Bytes	244 Bytes*	*Limit of 368 Bytes max combined input and output process data sizes for slave mode
Output Block	3584 Bytes	244 Bytes*	

OPERATOR INTERFACE

PROFIBUS System Status Readout	One two-color (red/green) Indicator
Network Activity Readout	One two-color (red/green) Indicator
Module Status Readout	One three-color (red/yellow/green) Indicator
IrDA Wireless Interface	115KBPS SIR

PHYSICAL CHARACTERISTICS

Weight	1.35 pounds
Front Panel Dimensions	2.5" W x 6" L
Enclosure Height	3" H

OTHER FEATURES

- Wiring hub includes terminations for two network taps
- Supports Hot Swapping
- Includes connections for repeater connectivity
- Several Mounting Options Available