

DMX-NET

The Easy Way to Distribute DMX512 from
Goddard Design Company

Goddard Design's DMX-NET modules provide an elegant means of distributing DMX512 signals throughout a theater or studio. Using DMX-NET modules allows locating DMX512 inputs and outputs in a facility at will. They can significantly increase flexibility and reliability. In many installations they allow you to configure a

DMX512 distribution system without using a patch panel or complicated routing switchers.

Using DMX-NET modules instead of conventional distribution amplifiers and passive wall plates allows you to reduce greatly both the number of cables run and the number of field terminations needed. Even in installations where computer controlled crossbar switching is needed, DMX-NET components can simplify the complexity of the required switches while providing greater flexibility.

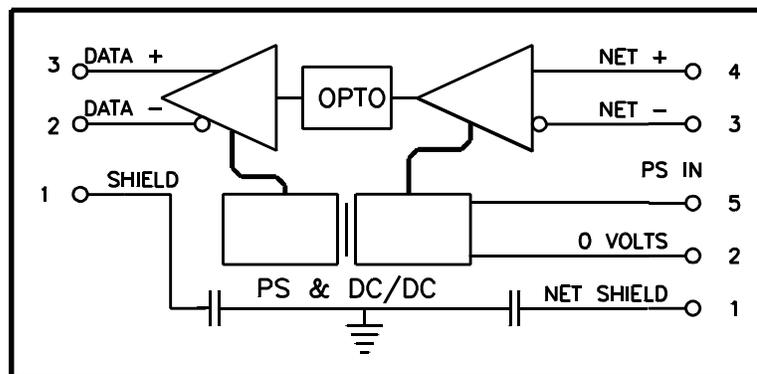
DMX-NET discourages extensive daisy-chaining - making fault isolation easier and repair time faster. Instead of one DMX outlet in the FOH slot, put in four; a shorted cable will disable only a few color scrollers instead of every FOH unit.

You may have faced a common theatrical requirement - three console locations in one facility. The booth is used for performances, an onstage location is used for focus and work calls, and a location in the orchestra is used for rehearsals. Until now this has meant a complicated solution, allowing only one DMX512 source to drive the network at one time while ensuring that lines connected to unused DMX512 sources are not unterminated stubs. Our DMX-NET input module allows creation of a DMX512 distribution network that may be selectively driven from multiple locations.

At its simplest DMX-NET can be imagined as a distributed optical distribution amplifier. The system provides optically isolated distribution modules, a choice of three types of buffered input modules (more on this later), active terminator/gated buffer cards and a network power supply. Punched stainless steel cover plates for single gang boxes are available. Please request our installation guide for full technical data and discussions on laying out systems. What follows is a description of the components of a DMX-NET system.

DMX-NET OUT - Isolated, Buffered DMX512 Output Module

Each output module has an optically isolated DMX512 output that can drive 32 - EIA485 load units. The modules are short-circuit protected and resistant to electrostatic discharge damage. Up to 32 modules may be connected to a 5-conductor DMX512 distribution bus. The bus provides DMX512 and DC operating power. The module requires a 12 to 24 volt power supply; a fully loaded module draws 95 MA.



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The DMX512 output is on a panel mount 5-pin “XLR” style connector. The output is electrically isolated from the input and frame. A data tally light indicates the presence of signal at the isolated output. Isolation is provided to prevent ground loops and other data problems, and uses an Optoislator designed for data use. Power supply isolation is by way of a transformer coupled DC to DC convertor.

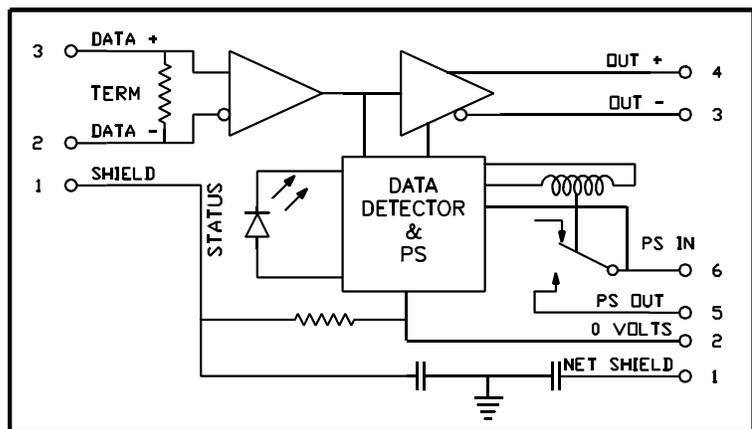
Basic modules are open “ell” frames 2.6” high by 1.54” wide by 1.6” deep. There is an outline drawing on the last sheet of this data sheet. They take up 6.4 cubic inches and are designed to fit in most standard US and UK electrical boxes. Prepunched cover plates are available for certain common boxes. Custom plates are available - please check factory stock. A hole punching drawing is available for those wishing to fabricate custom plates.

DMX-NET Input Modules

Our input modules’ unique architecture allows you to construct DMX512 distribution systems that may be selectively driven from multiple locations without patch panels. We offer three different types of input modules. The differences among the module types are the means of determining which DMX512 inputs have priority and whether or not the inputs are optically isolated.

Part FN-IN

The first type of module is prioritized by rank or position. We refer to these as “royal” modules. The highest priority module is always enabled and will drive the network if a DMX signal is supplied to its input. The second level module may drive the network if the highest is unused or “silent”. Successively lower priority modules may drive the network only if higher priority modules are silent. Priority is determined by physical position of the module in a daisy chain. The power supply connects directly to the power supply input of the highest priority input module. The power output of that module connects to the next highest priority input module and so on down to the lowest. Each module is equipped with a front panel mounted bicolor LED. When a module is powered up and ready to accept data this LED dimly glows red. If the LED is off, the module is disabled either because a higher priority module is on line, or because the network system is off. If a module is enabled and data is present, the LED will be bright green.

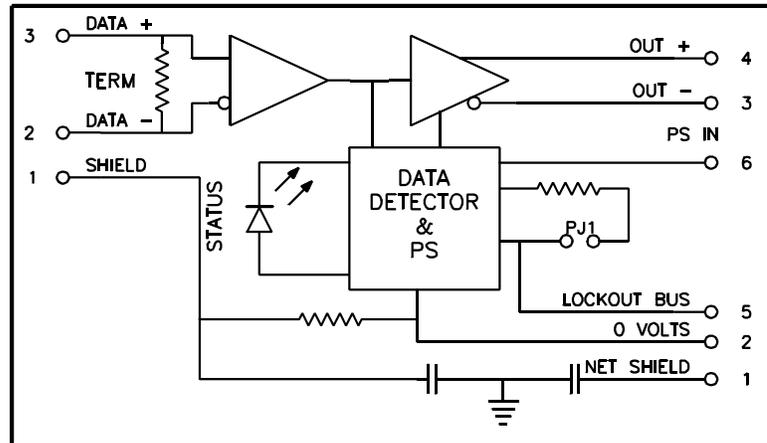


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Part FN-IN1

The second type of module is prioritized by order of connection. The first module sensing DMX512 on its input captures the system, locking out all other modules. Other modules are reenabled only when DMX512 transmission from this source ceases. We call these modules “democratic” because they all have the same priority.

You can combine both types of modules in a system; in such cases, “royal” modules have their ranked priority and outrank all “democratic” modules.



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Part FN IN3 Optically Isolated Input Module

This module is mechanically and functionally similar to type FN IN1 but provides full optical isolation between the input and the internal bus. Mechanically it is an open “el” frame 2.6" high by 1.54" wide by 2.1" deep. Its mounting centers are the same as other modules.

Part FN IN SNAP2

An input module is available which is designed to mount on snap track. It is used for building larger switching systems where components may be cabinet mounted. It is functionally similar to type FN IN3 providing full optical isolation between the input and the internal bus. Mechanically it is a 3" by 3" PCB with headers to connect to the internal bus and to a separately mounted XLR style connector. Please consult with the factory for more information.

Systems using input modules require a 6-conductor internal bus instead of the five wires required for output only systems.

The number of input modules on a network is seldom a problem. Input modules require a 12 to 24 VDC power supply; an input module receiving data draws approximately 80 MA. At standby a module draws approximately 20 MA. The power supply inputs are isolated from frame ground. Mechanical dimensions of input modules are the same as output modules.

Part FN AT -Active Termination and Gate Buffer Card

The FN-AT termination and buffer card is a system accessory that may serve several different functions, depending on how it is used. Please see our installation guide for detailed technical discussions.

FN-AT used as an Active Termination Card

DMX-NET has the line termination requirements like any DMX512 system. For details on termination and system layout see our installation guide. If only output modules are used, only a single resistive termination is required. If input modules are used, the line must be terminated at both extremities. Using the FN-AT card assures that if the internal bus is not driven, that the bus assumes a “marking” or “1” state; without the FN-AT card the state of the internal network bus would be indeterminate. If it is likely that the DMX source will be turned off while power to the output modules is left on, it’s a good idea to use the FN-AT card as the termination.

FN-AT used as a Gated Buffer

The card also provides a second power supply regulator and an un-isolated DMX buffer whose output can drive an additional 32 load units. Since its input load is less than one load unit whether or not power supply is present, it may be used as a DMX512 gate by controlling its power input. If a network is zoned, must support more than 32 load units, or be “Y’ed” the FN-AT buffer card is used. If only the termination feature is needed, the output of the buffer is not used.

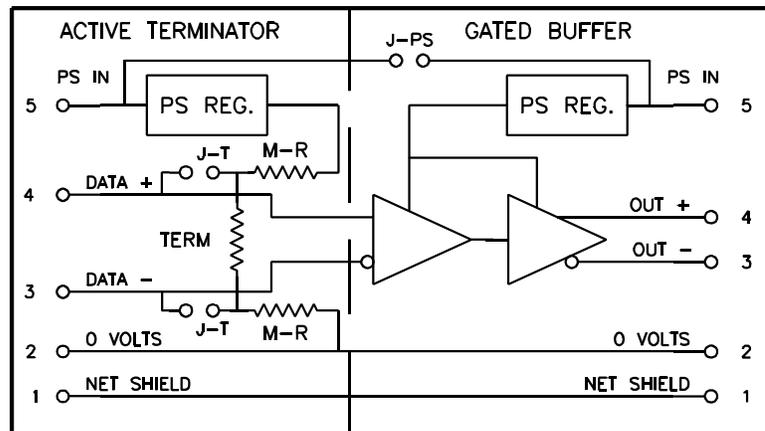
The FN-AT card is the same size as all other modules, but has no front panel connector. Network termination connections are made by way of a removable 5-pin screw clamp style header. Buffer output connections are made via a second 5-pin screw clamp style header.

DMX-NET Power Supplies

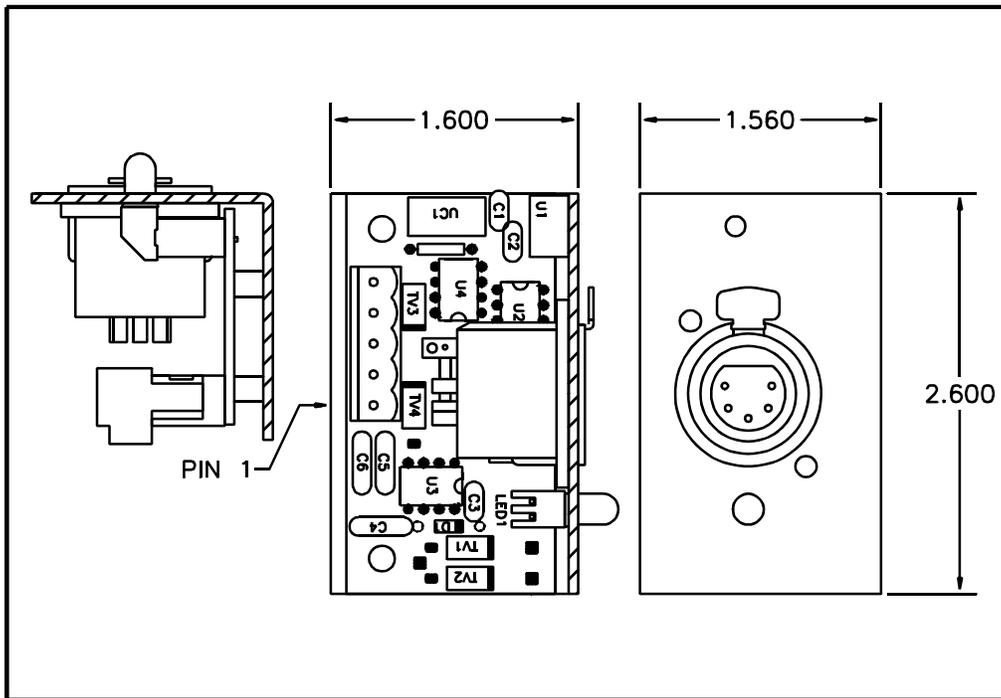
DMX-NET can be powered by any suitable DC power supply. Please see our installation guide for information to calculate the required supply. Simple supplies are available from any good electronics distributor. Goddard Design Co. provides a power supply that is also the master input station and system control unit. This piece is based on our Flexible Optical Splitter line, and is built into a 19" rackmount or table top chassis. Please see our FOS data sheet for full feature descriptions; pricing is based on the ordered features, so please consult the factory.

DMX-NET is a product that is continuing to evolve. Feel free to contact Goddard Design Co. for up to date features. Specifications and prices are subject to change.

DMX-NET is available from Goddard Design and selected system integrators.



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MECHANICAL DIMENSIONS FN OUT

PART #	Description	Professional Net Price
FN OUT	Optically Isolated distribution module	\$150.00
FN IN	Buffered Input Module, Position Prioritized (royal)	\$125.00
FN IN1	Buffered Input Module, First on Prioritized (democratic)	\$125.00
FN IN3	Isolated buffered Input module, First on Prioritized (democratic)	\$170.00
FN AT	Active Terminator & Gated Buffer Card	\$150.00
FN IN SNAP2	Snap track mounting isolated input module.	\$150.00
FN 1GSS	Punched, Flush, Single Gang, Stainless Steel Cover Plate	\$12.00
FN. PS-xxx	Network Power Supply	upon application

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