

NM-DIS

User Guide V1.00

Introduction

The NM-DIS is 16 discrete channels to NMEA-0183 converter. It enables connection between systems that output their status using dry contact (e.g. output relays) and AC or DC signal interfaces.

Operation

The NM-DIS samples every one of the 16 inputs and then outputs its status in a NMEA-0183 sentence according to the following format:

```
      1 2 3 4           n  
      | | | |         |  
$SNXDR,a,x,a,DXXCXX,*hh<CR><LF>
```

Field Number:

- 1) Transducer Type
- 2) Status data:

x=0 when voltage at input channel is less than 7Volt DC or AC (OFF) or
x=1 when voltage at input channel is more than 7 Volt DC or AC (ON)

- 3) Units of measurement (not used)
- 4) Channel address:

Portion DXX of channel's address is unique for every device and it can be programmed via Dip Switches within the range of D00 to D15 according to the following table

Sw3	Sw2	Sw1	Sw0	DXX value
OFF	OFF	OFF	OFF	D00
OFF	OFF	OFF	ON	D01
OFF	OFF	ON	OFF	D02
OFF	OFF	ON	ON	D03
OFF	ON	OFF	OFF	D04
OFF	ON	OFF	ON	D05
OFF	ON	ON	OFF	D06
OFF	ON	ON	ON	D07
ON	OFF	OFF	OFF	D08
ON	OFF	OFF	ON	D09
ON	OFF	ON	OFF	D10
ON	OFF	ON	ON	D11
ON	ON	OFF	OFF	D12
ON	ON	OFF	ON	D13
ON	ON	ON	OFF	D14
ON	ON	ON	ON	D15

Portion CXX indicates transmission of currently sampled channel and gets values within range C01 to C16.

- n) Checksum
- <CR> carriage return
<LF> line feed

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Input Ports

The NM-DIS has 16 inputs that can be connected to any system able to output status via dry contact or AC or DC signals up to 110V. Each input is optically isolated and ground independent. Inputs can be connected as shown in figure 1.

Output Ports

The NM-DIS has one RS-422 and one RS-232 output port for transmission of converted status of interfaced systems. Both ports can deliver NMEA sentences to any modern computer running the appropriate software on Windows 98 and above provided that serial communication follows the 4.800/8/N/1 standards.

The RS-232 port is not optically isolated and should be used for testing purposes only to avoid DC leakage. It can be used though to interface a computer system if proper isolation is achieved or if the computer is supplied from an isolated power supply.

Power Supply

The NM-DIS can be powered with in the range of 9-35 Vdc. The nominal voltage of 24 Vdc is advised for powering the device in normal operation. Power input port has a protection for incorrect polarity connection of the supplying voltage.

Specifications

Supply Voltage	9 to 35 Vdc
Power Supply Protection	PTC Reset able Fuse Vmax: 60V, Imax: 40A, Ihold: 0,25A (23°C), Itrip:0,5A (23°C), Max time to trip (23°C): 2,2sec for 1,25A
Current Consumption	50mA in idle state/ 150mA in full output mode
Inputs	16 x discrete, optically isolated Common Mode Rejection: 10kV/usec, Isolation: 480 Vrms
Outputs	1 x buffered RS-422 1 x RS-232
Output protection	Buffered for RS-422 output
Speed for NMEA outputs	4.800/8/N/1
Dimensions	Width = Depth = Height =
Housing	

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