WXBits

DIGITAL INPUTS/OUTPUTS MODULE FOR MICROSAT PRODUCTS

Instruction manual

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Designer: Mateusz Płociński SQ3PLX
Producer: Microsat
info@microsat.com.pl

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1. Technical parameters

Dimensions	60x85x30mm
Weight	65g
Supply voltage	12VDC typ. (9 - 24VDC)
Power consumption	15mA
Operating temperature	-30°C / +50°C
Data interface	RS-485 half-duplex
Communication range	1200m
Inputs	
Input type	CNY17-3 optoisolator
Trigger method	Shorting to GND
Maximum safe input voltage	<= Vin (9-24VDC)
Outputs	
Output type	IRF7103 N-MOSFET transistor
Output configuration	Open-drain (shorting to GND)
Maximum safe output current	<= 2A

2. Device description

WXBits module allows you to control 4 MOSFET transistor power outputs and read states of 4 optoisolated inputs. Device is controlled via RS-485 serial interface. Module is designed to work with Microsat products but it may be possible to to read data from it by using any other device with a RS-485 bus (directly or via serial port adapter).

2.1. Connecting WXBits to Microsat product

In order to connect WXBits module, we use two differential RS-485 bus terminals. On the module side these terminals are labeled as RS-485 A+ and B-. For various Microsat products RS-485 bus pins are led out different way:

- For WX3in1 Plus 2.0 RS-485 pins are available via separate terminal on rear panel,
- For WX3in1 Plus and WX3in1 Mini RS-485 pins are available via MINIDIN connector on the rear panel (together with radio pins),
- For PLXDigi and PLXTracker RS-485 pins are available inside DB-9 connector.

Please check relevant device manuals for accurate pinout.

In RS-485 standard grounds of two devices doesn't need to be connected, which is desirable for long distance transmission. However, note that two devices can not have different potentials, otherwise communication will not work, and the potentials are discharged by the unit protection diodes. Therefore, two methods are used to connect:

- common ground (preferred and recommended for WXBits),
- grounds fully separated (for example with power transformers).

So the simplest connection method is:

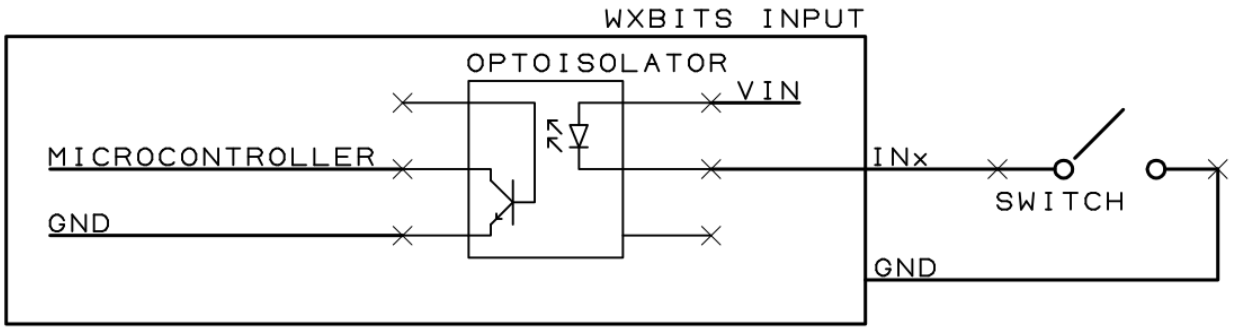
- connect WXBits RS-485 A+ to RS-485 A+ port of relevant Microsat device,
- connect WXBits RS-485 B- to RS-485 B- port of relevant Microsat device,
- connect WXBits GND to the same ground as relevant Microsat device.

If you wish to connect more than one module on RS-485 bus (for example WXTelemetry + WXBits), then you should:

- connect WXTelemetry, WXBits and relevant Microsat device RS-485 A+ pins together,
- connect WXTelemetry, WXBits and relevant Microsat device RS-485 B- pins together,
- connect WXTelemetry, WXBits and relevant Microsat device GND to the same ground.

2.2. Module inputs

Each WXBits module input is composed of a single CNY17-3 optoisolator which needs to be connected to GND for activation.



2.3. Module ouputs

Each WXBits module output is composed of a single N-MOSFET transistor in open-drain configuration. In other words, they will short O1/O2/O3/O4 outputs to GND when activated. You can use them to activate external relays for high-voltage or high-power systems.