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ByBus

NSC106RHW / NSC103RHW DATA SHEET

Programmable controller networked, with 10 logic inputs; 2 inputs for digital 1wire thermal sensor or analogic 5V (autodetect); 6 outputs (3 outputs for NSC103RHW) relay 16A; hang for DIN rail EN 60715 / EN50022; dimensions 106x90x57mm 6 modules DIN 43880. Dual mode power supply 12/24V.

The unit can host logic, SELV (Safety Extra Low Voltage), commands, and has relays as outputs able to switch low voltage (up to 250VAC) loads with current up to 16 A on resistive, slightly inductive or slightly capacitive loads such as fluorescent and HID lamps with power factor correction for $\cos\phi$ 0.9 (see table).

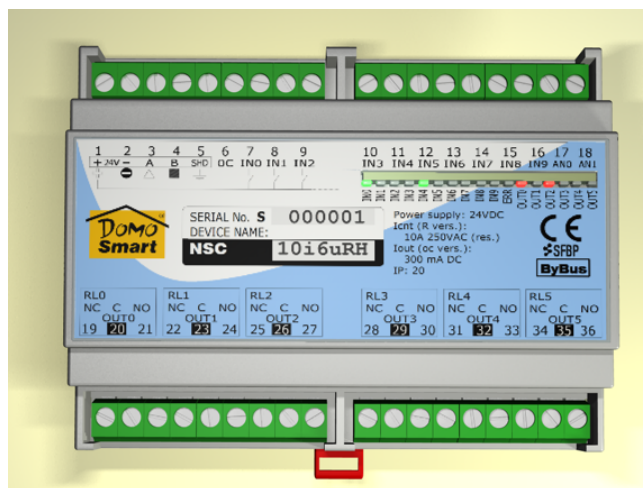
Has 2 “AW” inputs for 1-wire data signal allowing to host sensors DS1820, or analogic signal 0...5V or resistive values 0...15Kohm with built in autodetect.

Characteristics

	Minimum	Maximum
Power supply - standard mode	17.5 V cc	30 V cc
Power supply - power save mode ⁽²⁾	9 V cc	18 V cc
MAX sunk current – vers. RH	165 mA max @ 24V	
Corrent sunk full released ⁽¹⁾ (R/RH)	Max 30mA (20mA @12V)	
Communication physical layer	RS485 L (¼ load)	
Communication protocol	Open SFBP	
Logic inputs (logic one) Logic zero voltage: < 2.9 V ; Logic one voltage: > 8.7 V Reference: zero (terminal -)	9 V	30 V
	Max frequency: 100 Hz; antibounce, bouces up to: 15ms	
Input current:	-	2.4 mA
Analogic or 1-wire DS1820 input selection for AW inputs: autodetect		
Resistive range for analogic inputs	0	15KΩ
Voltage range for analogic inputs Z<100Ω (see note)	0	5 V
Analogic inputs bias	+5V / 1500 Ω	
Logic outputs Relay, contacts NC-C-NO (see note)	100mA (not suitable for signals)	16A 250VAC
AC peak current for 5ms though the NA contact	96 A	
Operating temperature	-5 °C	+50 °C
Storage temperature	-10 °C	+75 °C
Storage and operating relative humidity [% UR]	30	95 (no condens.)
Dimensions	106 x 90 x 57 mm	
Weight (approx.)	250 g	

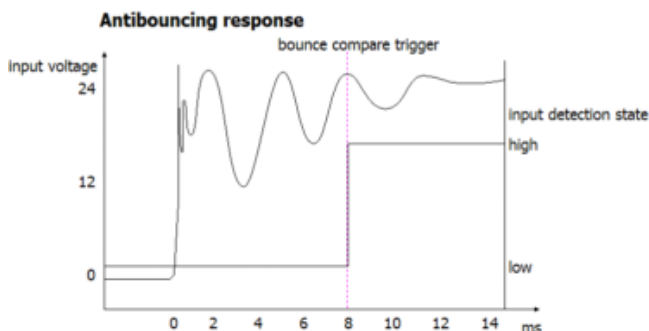
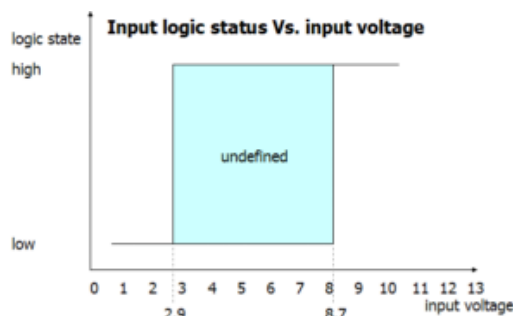
1) in power save mode all relays are released.

2) power save mode autodetect when voltage drops under 18V.

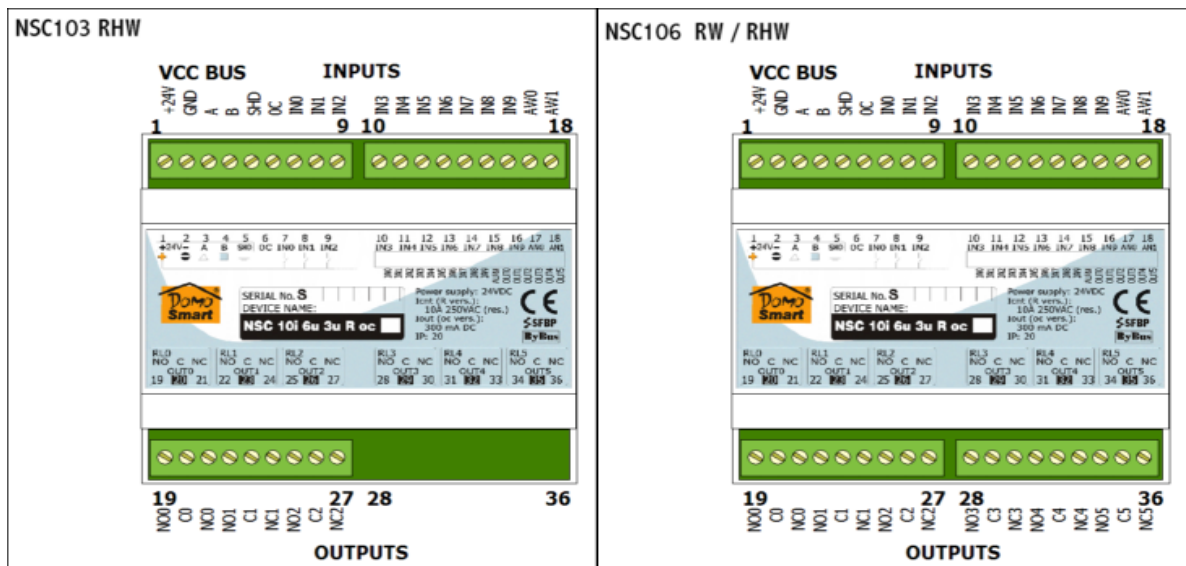


Suggestive table for loads:

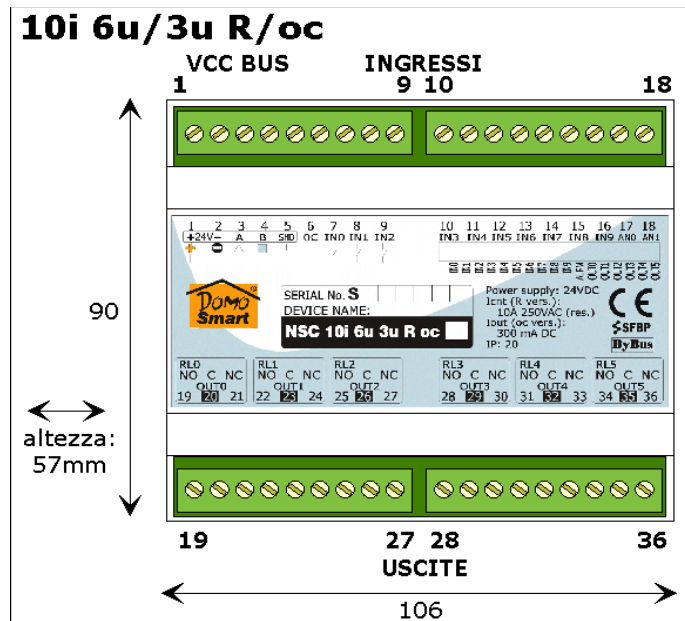
Halogen and incandescent lamps	2000W
Resistive load (i.e.: heater)	2640W
Fluorescent lamps (w/out power factor correction capacitor)	1500W
Fluorescent lamps with power factor correction capacitor	550W
HID (high intensity discharge) lamps	250W



Electrical layout

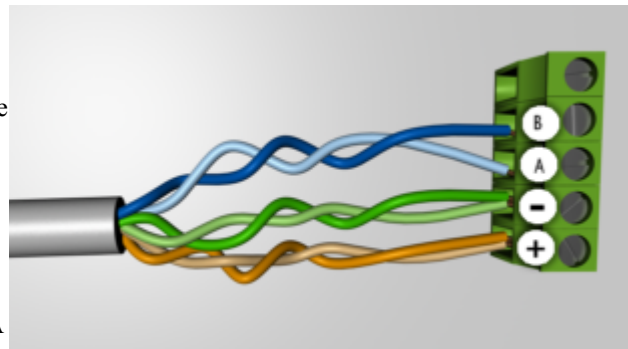


Dimensions



BUS connection

Connect the bus input (power supply and A-B data line) with a standard ethernet cable Cat.5 UTP, other suitable cables are: EIB green cable, eth. Cat.5 STP (these cable are recommended for long lines). For EIB and STP cables connect the shield to ground via a 100Ω 1W resistance. Best connection is the “bus” configuration (daisy-chain), but “star” and mixed configurations are acceptable. When the line has length over 300 meters “bus” configuration is recommended as well as terminators (¼W 4,7KΩ resistance connected at each end side of the line between A and B).



Use and connection of the logic inputs

Logic inputs can be connected to a source of direct voltage referred to the negative of the input power supply. For this purpose it can be used the supplied +24, as it is shown in the draw aside.

It can be used any wire, even thin wires for low voltage and not shielded, for length up to 20 meters.

Use and connection of inputs for 0W sensors or analogic

This device is able to automatically detect if a digital 1-wire temperature sensor type DS1820 is connected or a normal analogic signal.

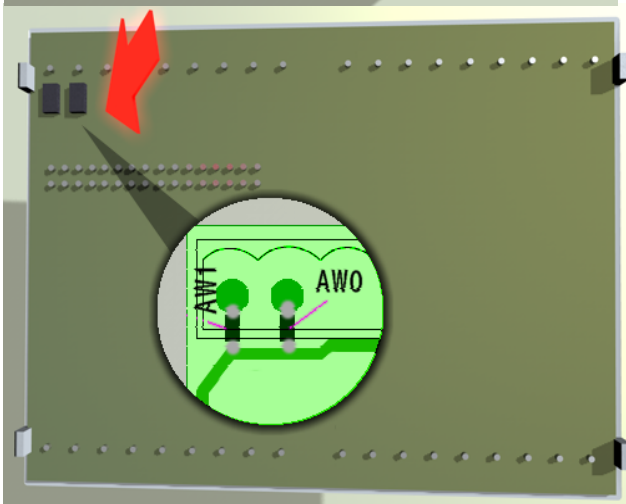
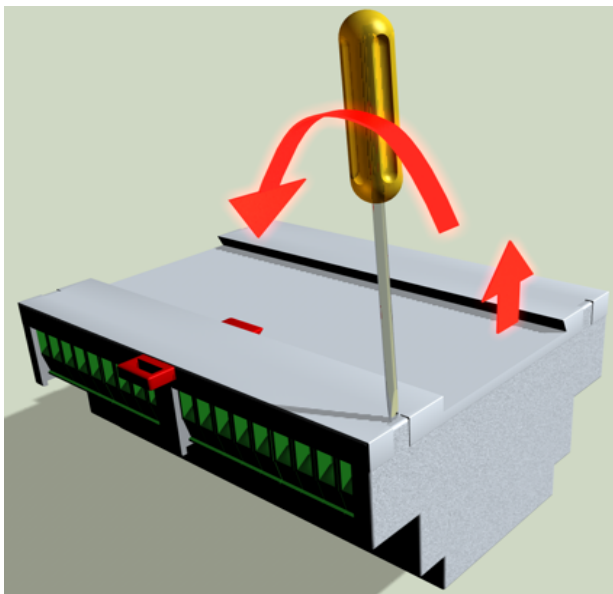
Use the `getIn` statement giving `DGTDATA+n` or `ANALOG+n` respectively to read the digital temperature data or the analog value from the input.

The input is biased so that it is also possible read resistance values, such as a resistive potentiometer or a variable resistive load (see figure 2).

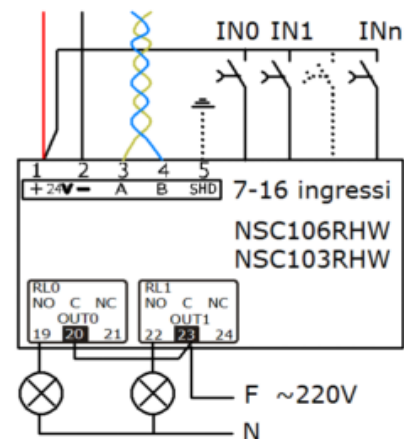
To read analog values can be connected amplified sensors or transducers with a signal range between zero and 5V maximum (tolerance 5%) provided that the output impedance of the amplifier or transducer is less than 100Ω.

To read transducers with signal in range between zero and 10V, or to read signals source with high impedance is required to remove the internal bias resistance, as shown in figure 3.

How to remove analog input biasing



Esempio collegamento ingressi logici



Esempio collegamento ingressi 1-wire o analogici

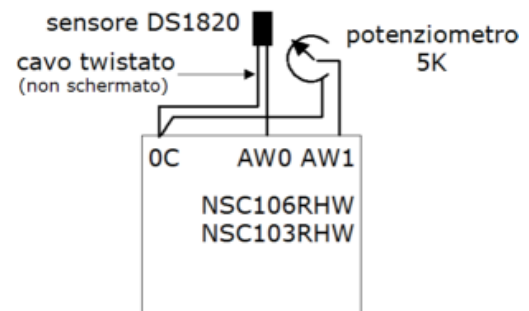


figura 2

Open the enclosure of the device aiding by a screwdriver to gently force the hangers that hold the bottom side of the enclosure.

Locate the two biasing resistances: remove the one of the related input you want to get rid bias, with the aid of a solderer specific for electronic.

Notes:

If heavy inductive loads should be driven by the unit, add a RC snubber connected in parallel to the involved output.

Capacitive loads are not admitted, with the exception of the power factor correction capacitor of fluorescent or HID lamps. Anyway it is not recommended the direct connection of banks of fluorescent/HID lamps: add an external strong enough contactor.

Notice: see also general manual.