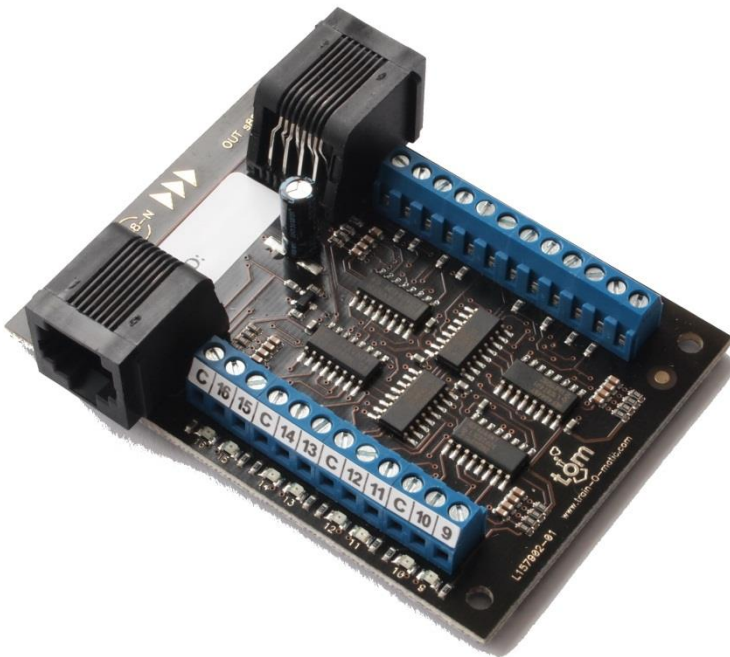




S88N Module

User Manual
- version 0.0.3 -





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Subject to technical modification



Please read this manual carefully before carrying out the installation!!! Although our products are very robust, incorrect wiring may destroy the module!

During the operation of the device the specified technical parameters shall always be met. At the installation the environment shall be fully taken into consideration. The device must not be exposed to moisture and direct sunshine.


A soldering tool may be necessary for the installation and/or mounting of the devices, which requires special care.

During the installation it shall be ensured that the bottom of the device should not contact with a conductive (e.g. metal) surface!

Content

1. Features.....	3
2. Technical parameters.....	3
3. General description.....	3
4. Wiring and mounting.....	4
5. Inputs	6
6. Recommendations.....	7

1. Features

- RJ45 connection allows to use standard patch cables
- compatibility with digital  command stations and interfaces
- input status signaled by control LEDs
- easy-fitting through the 4 mounting holes (included as accessories)

2. Technical parameters

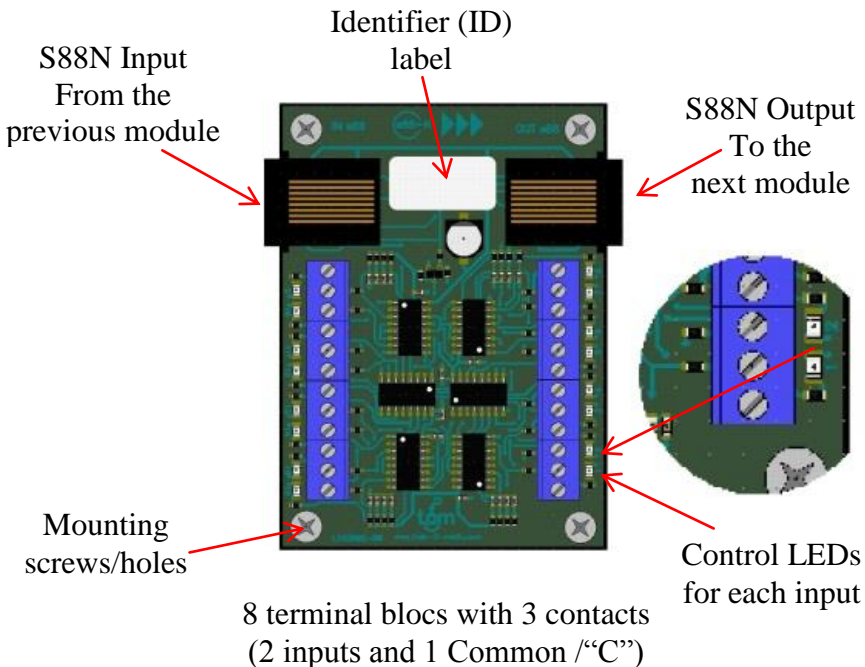
- number of inputs: 16
- power supply voltage: 5-12Vdc through S88N connector
- supply current in idle state: <5 mA
- dimensions: 65x78 mm
- weight: 35 g
- class of protection: IP00
- operating temperature: 0 to +60 ° C
- storage temperature: -20 to +60 ° C
- moisture: max 85%
- type and interface cables used: RJ45 jacks, CAT5 cable

3. General description

The S88N module allows transmission to the digital command station or the PC interface the status of 16 digital inputs. Such modules can be cascaded into a number of 8-16 pieces (128-256 inputs), depending on type of command station / digital interfaces. Each input is equipped with a LED control that monitors the input's logic state: LED lit means that there is an electrically closed contact between input and common terminal ("C"); LED off means inactive input (open contact). Monitoring only works when connected to the S88N bus.

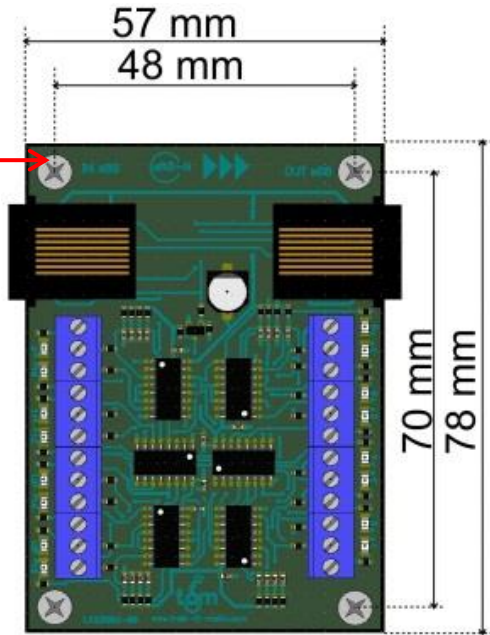
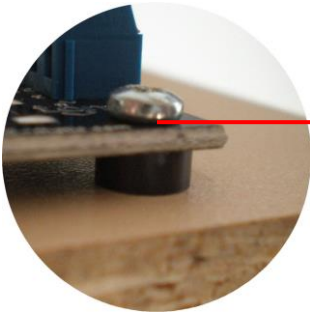
4. Wiring and mounting

The RJ45 connector labeled S88N IN is the input of the module and must be connected to the outputs of the previous S88N module. The RJ45 connector labeled S88N OUT is the output of the module and must be connected to the digital command station / PC interface. For digital stations and PC interfaces it is necessary to specify the number of devices connected on the S88N bus. Please make these settings according to the manuals of the digital stations and PC interfaces.

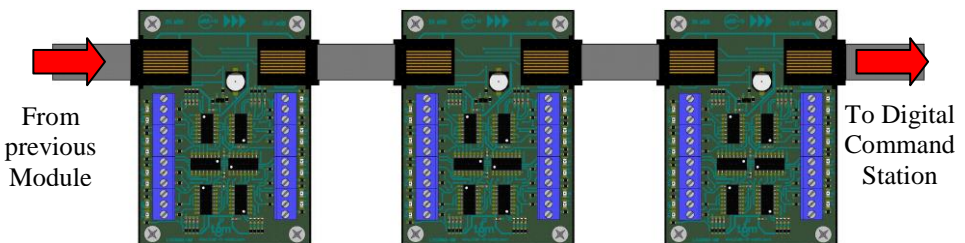


S88N modules can be numbered using a unique identifier. This identifier can be marked on the ID label located on the module.

Installing S88N modules on diorama countertop is done with the supplied screws and spacers. Leave sufficient space around the module to allow access to the RJ45 connectors. For positioning and mounting see figure below:



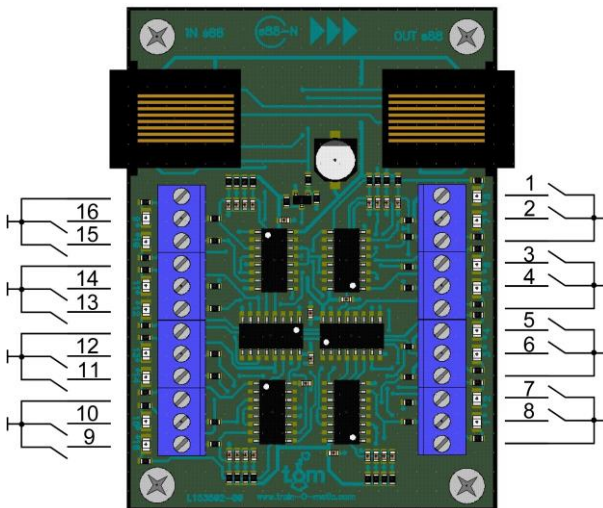
Interconnection between modules is done using by using cables made to special length or a standard UTP patch cord. They are commercially available in lengths of 0.5, 1, 2, 3 and 5 meters.



5. Inputs

Inputs are activated by input pulses, and their state is reset only after the digital command station or PC read them. Thanks to this mechanism, even very short pulses can be transmitted to the station.

Enabling an input is done by connecting it to the common ground connection (Common /“C”). To drive inputs you can use occupancy detectors (BOD2/BOD4), electrical contacts, REED relays, push-buttons.




Each terminal block with 3 pole contains two input terminals and one terminal connected to Common/“C”. These Common/“C” terminals are internally connected to circuit ground. We recommend using isolated external contacts (open-collector/drain outputs, relay contacts) for driving them.

6. Recommendations

Warning! Thanks to the USB connection on most S88-computer interfaces, common grounding may coincide with protective ground (earth) connection of the computers. For these reasons, the direct connection of modules to the rail potential itself is not possible. It is recommended the use of the occupancy detectors with optical isolation (BOD2, BOD4).

The pinouts of the S88N signals are in the table below:

S88 classic (Marklin)	Signal	RJ45 Pin No. 	UTP cable-pair Color
1	Data	2	Green
2	GND	3,5	White-Orange and White-Blue
3	CLOCK	4	Blue
4	PS (LOAD)	6	Orange
5	RESET	7	White-Brown
6	+5V/+12V	1	White-Green
-	RAILDATA	8	Brown
-	SHIELD	unconnected	



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