General description

The OPT-821A daughter board provides optical isolation and input digital signal conditioning of the DAQ cards.

The board provides eight input blocks (isolated between each other) for processing DC signals up to 32 V. All channels work as inverting, i.e. high input voltage is represented by the output level "L". Every channel is fitted with an indicating LED, signalizing high input signal level.

The output port operates in NPN open collector mode (requires pull-up resistors; meets all DAQ cards TEDIA) or TTL mode (requires an external power supply).

General instructions for use

The OPT-821A board is designed for DAQ&C applications and may be used only according to the manufacturer's recommendations and precautions given in this manual and other general standards and terms and may be used only such a way, that its failure caused by any reason will not be dangerous to any person or property.

Installation

The OPT-821A board is supplied as an unencapsulated kit intended for fastening via four screws, a plastic housing DIN-801 suitable for mounting on the 35 mm DIN rail is supplied optionally.

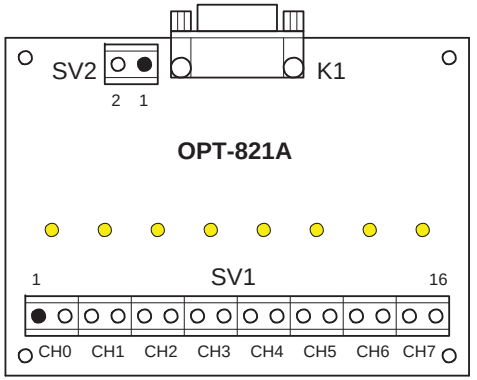
The board can be used in an environment with operating temperature -10~60 °C and relative humidity up to 90%, noncondensing and normal levels of pollution.

Specifications

input voltage - level L:	< 5 V_{DC}	(i.e. level H on the output signal)
input voltage - level H:	> 15 V_{DC}	(i.e. level L on the output signal)
maximum input voltage:	±50 V_{DC}	
input impedance:	6 kOhm approx.	
output voltage - level L:	< 0.5 V	(1.6 mA max.)
output voltage - level H:	> 2.5 V	(0.5 mA max., TTL mode)
signal delay:	< 0.5 ms	
isolation voltage (see note below):	1500 V_{AC}	(all inputs against outputs)
	100 V_{DC}	(between inputs)
power supply (see note below):	+8~30 V_{DC}	(10 mA typ., 15 mA max.)
recommended cable length:	10 m max.	(input signals)
	2 m max.	(output signals)
dimensions of board:	72 x 88 mm	
mounting hole spacing:	61.5 x 77 mm	
mounting hole diameter:	3.5 mm	

Note: "AC" indicates the rms value of a 50 Hz AC harmonic signal.

Note: The power supply is required only for TTL mode.



K1 connector pin assigment (interface port, D-Sub 9, female)			
1	CH0 - DIN port signal (PC card)	6	CH1 - DIN port signal (PC card)
2	CH2 - DIN port signal (PC card)	7	CH3 - DIN port signal (PC card)
3	CH4 - DIN port signal (PC card)	8	CH5 - DIN port signal (PC card)
4	CH6 - DIN port signal (PC card)	9	CH7 - DIN port signal (PC card)
5	GND - common signal (PC card)		
Note: The OPT-821A signals operate in "NPN open collector" mode or in TTL levels.			

SV1 terminals pin assigment (digital inputs)			
1	CH0 - input signal (positive)	9	CH4 - input signal (positive)
2	CH0 - input signal (negative)	10	CH4 - input signal (negative)
3	CH1 - input signal (positive)	11	CH5 - input signal (positive)
4	CH1 - input signal (negative)	12	CH5 - input signal (negative)
5	CH2 - input signal (positive)	13	CH6 - input signal (positive)
6	CH2 - input signal (negative)	14	CH6 - input signal (negative)
7	CH3 - input signal (positive)	15	CH7 - input signal (positive)
8	CH3 - input signal (negative)	16	CH7 - input signal (negative)
Note: The schematic of the input circuits is shown in the figure Fig. 1.			

SV2 terminal block pin assigment (power supply)	
1	power supply (+8~30 V_{DC}, current consumption 10 mA typ., 15 mA max.)
2	power supply (GND, directly connected to pin 5 of K1 connector)
Note: The power supply is required only for TTL mode.	

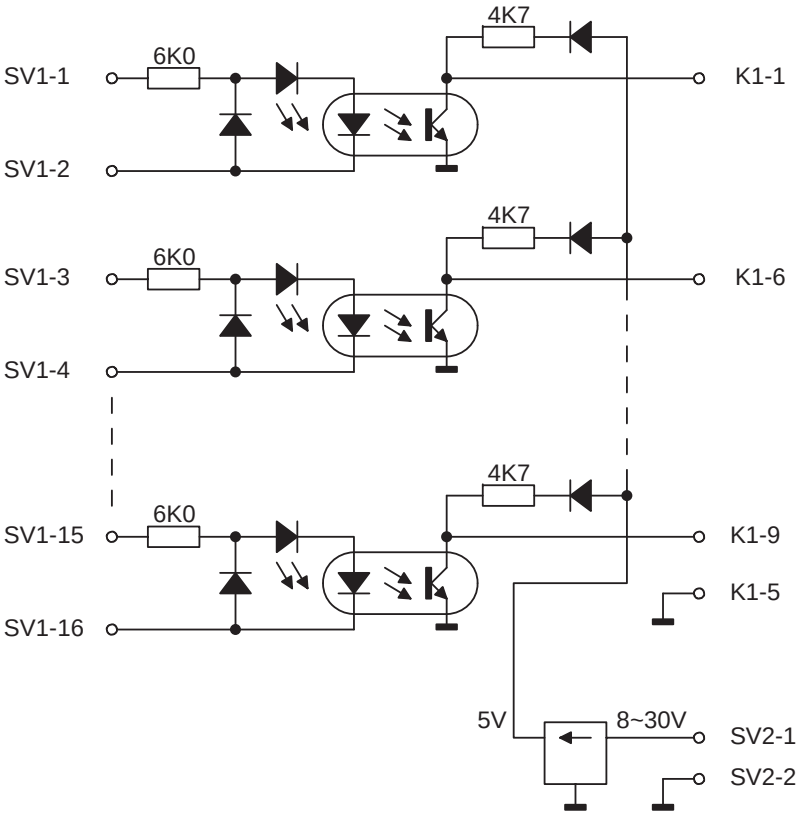


Fig. 1. Simplified schematic of OPT-821A internal circuits.
An external power supply 8~30V is not required if the input port of the PC card is equipped with pull-up resistors (all types of TEDIA cards are equipped with pull-up resistors).

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OPT-821A

User Guide

(further information available at http://www.tedia.eu)

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