Nord Cryo Inc.

Manual

BoBoX1A (300501)

BreakOutBoX with filters

NORD CRYO INC.

BoBoX1A

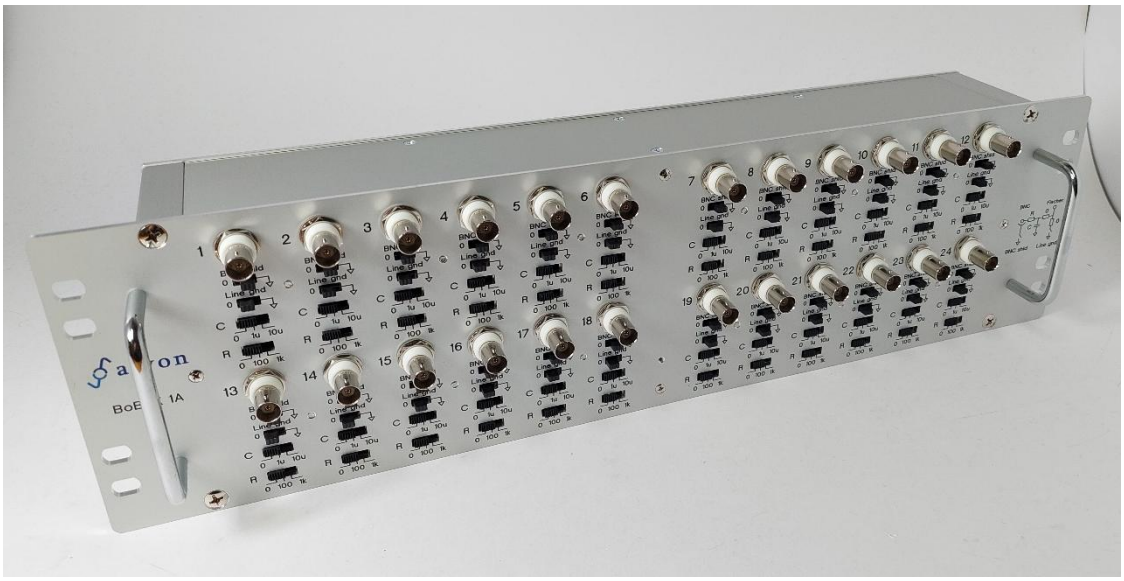

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Table of Contents

BoBoX1A

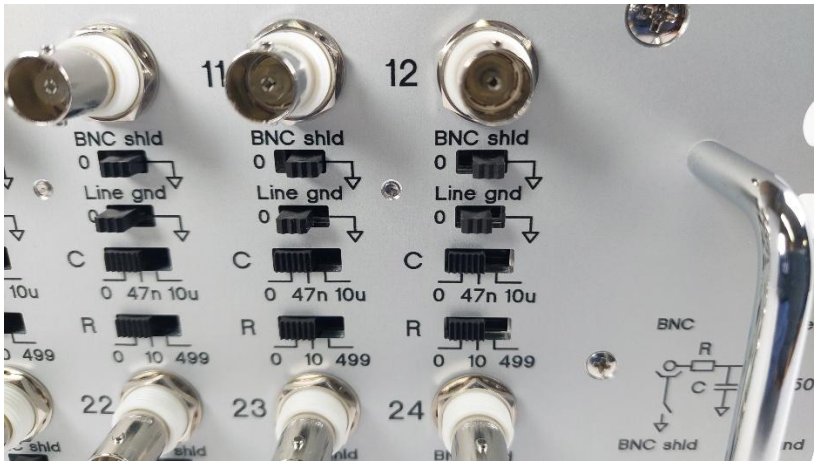
BreakOutBoX with filtering

Nord Cryo BoBox1A is a versatile breakout box for separating and filtering signals from a multipin Fischer connector to BNC connectors. Capacitance and resistance values of the integrated RC-filters can be selected from the front panel by using sliding switches.

Main features

- Each BNC connector is insulated with the following grounding options:
    - Center conductor (line) is grounded to dedicated "PCB ground" via resistor (can be zero ohms).
    - Outer conductor (shield) is grounded to dedicated "PCB ground"
- Selectable RC-filter with respect to "PCB ground" with values
    - **R**: 0, 100Ω, 1kΩ or user-defined
    - **C:** 0, 1 µF, 10 µF or user-defined
- Chosen R and C values are marked in onto the front panel.
- A summary of used R and C components is sent to customer after approval of their values.
- User selectable ground connection switch to connect "PCB ground" to enclosure.
- Additional line resistor (can be zero) and surface-mount feedthrough filter before Fischer connection.
- Output connector Fischer DG 105 A093 or a custom one.
- 19" rack mountable, height 3U (width 483 mm, height 132.5 mm).

Note: this is a low-frequency RC-filtering unit. User should filter out higher frequencies for example with ferrite beads in the output cable if low noise operation in required.



Basic operation

BoBox includes filtering for 24 signals. Two signal channels are illustrated below.

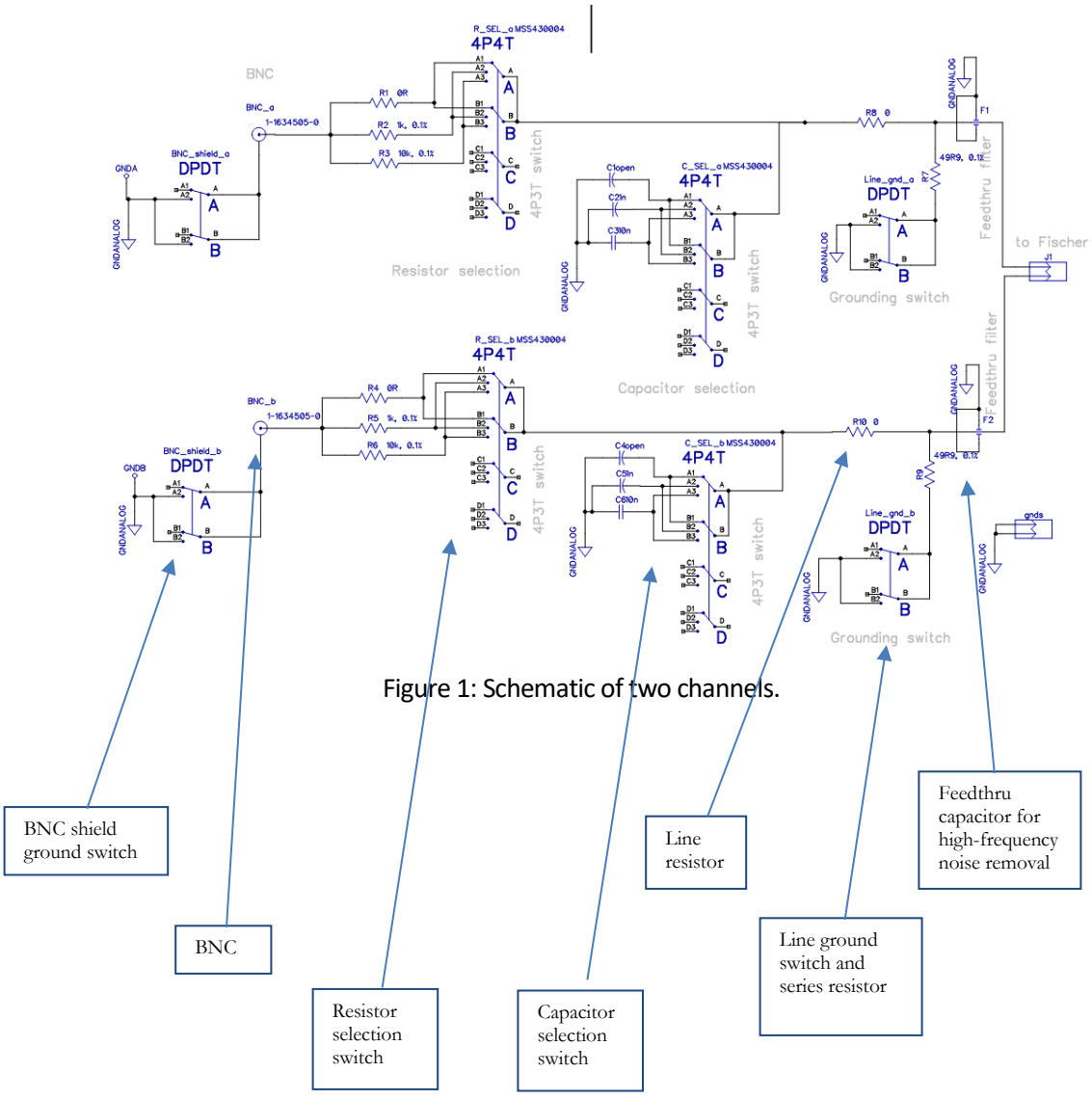


Figure 1: Schematic of two channels.

BNC shield ground switch

BNC

Resistor selection switch

Capacitor selection switch

Line resistor

Line ground switch and series resistor

Feedthru capacitor for high-frequency noise removal

Output connection

In Fig. 2 is illustrated back panel of the BoBoX1A. There are engravings to mark pin numbering and a Fischer DG 105 A093 connector for signals out. Printed circuit board ground "PCB ground" where the filtering is referenced has its own 4mm banana connector. Enclosure (chassis) ground is separated. A toggle switch can be used to connect/disconnect these two grounds.

Figure 2: Rear panel switch for grounds connection.

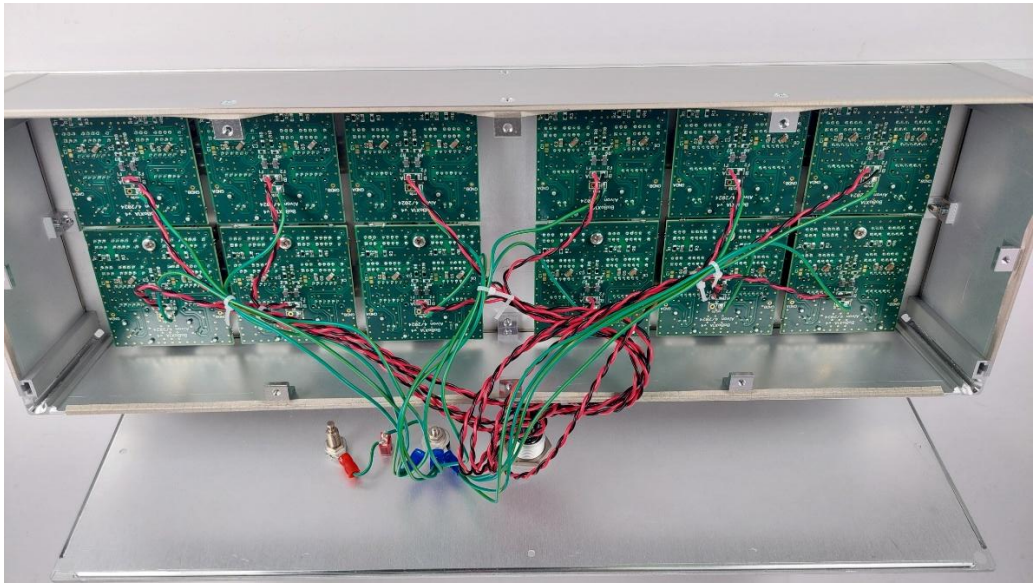


Figure 3: Internal twisted pairs from Fischer to channels. Green wires are ground.

Problems in operation

Problem	Solution
No signal through the box	Check that the BNC is not grounded.
Resistor or capacitor values need to be changed	Open the enclosure rear panel and locate the components to be replaced. Ask Nord Cryo for assistance.

Specifications

Absolute maximum ratings

Voltage	± 50 V (unless R or C ratings are limiting)
Leakage current at 10 Vdc input	Max 300 pA

Connectors

Input	BNC
Output	Fischer DG 105 A093 or custom

Enclosure

Material	Anodized (backside chromated) aluminum.

Physical dimensions

Enclosure dimensions (Width x height x length)	483 mm x 132.5 mm x 130 mm
Weight	2.2 kg

Document revision history

Date	Version	Description	Author
8.7.2026	1.0	Initial draft	JSP