

DATASHEET
7055 Series
USB 2.0/3.0 Isolators

FEATURES

- Provides galvanic isolation to the USB bus
- Compliant to USB 2.0 Hi-Speed 480 Mbps (all models)
- Compliant to USB 3.0 SuperSpeed 5 Gbps (-C and -D models only)
- Backwards compatible to Full Speed and Low Speed
- Isolation withstands up to 5kV_{RMS}
- Advanced ESD protection (20kV IEC Air-gap discharge)
- Works out of the box, no drivers needed
- Transparent to host and device ("no-hub"): wide compatibility to all operating systems, embedded systems and devices

- Supports all USB-specific transfers and modes
- No additional round-trip latency
- Powered by USB bus, no separate power supply
- Ultra-quiet power rail isolation, linear regulation
- Optional AUX supply input on isolated side
- Connectors: host-side USB-B; device-side USB-A
- Status LED showing bus state and speed
- Impedance controlled high-speed circuit design
- National compliances: FCC, CE, RCM, ICES-003
- Aluminum enclosure
- Dimensions: 120 x 30 x 70 mm
- Engineered and manufactured in Germany



Top: 7055-C/D; bottom: 7055-B

APPLICATIONS

- Industrial automation systems
- Medical equipment
- Measurement devices
- Environments requiring safety insulation
- Machine protection
- Broadcast and Studio
- Audiophile-grade home systems
- All applications requiring clean and stable USB connections with separate grounds

Table 1 Model Types and Differences

7055-B	USB 2.0 only	5 kV RMS AC isolation
7055-C	USB 2.0 + 3.0	1 kV DC isolation
7055-D	USB 2.0 + 3.0	5 kV RMS AC isolation

Options: -8 = DIN-Rail mount; -S = On/Off-Switch

Table 2 LED Blink Codes (USB 2.0 mode changes only)

Flashing	Standby, USB connection not established
Double Flashing	Suspend, USB connection established and suspended by host
Slow Blinking (~1 Hz)	Low Speed (1.5 Mbps) data transmission
Blinking (~4 Hz)	Full Speed (12 Mbps) data transmission
Fast Blinking (~14 Hz)	High Speed (480 Mbps) data transmission
Always On	USB connection established (green color for USB 2.0, blue for USB 3.0)

Table 3 Technical Specifications

Power Supply	Powered by USB host device; internal DC/DC converter for isolated side
Supply Voltage	4.5–6V
Supply Current at 5V	0.14A in standby or suspend mode (7055-C: 0.4A)
Isolated Output	4.5–5.0V (max.); 0.5A (7055-C: 1A); Efficiency 90% (2A if AUX supply used)
AUX Supply Input	4.5–5.0V 2A (max.) Input for optional high current device supply
Isolation Rating*	7055-B/7055-D: 5000V _{RMS} for 60s; 7055-C: 1000V for 60s
Isolation Working Voltage*	Up to 600V _{RMS} reinforced insulation working voltage; up to 600V _{RMS} basic insulation working voltage as per IEC 61010-1; up to 1200V _{peak} for basic insulation working voltage as per IEC 60747-5-2; IEC 60601-1: ask Intona
Insulation Resistance	> 10GΩ (1kV, 21°C, 55% rel. humidity; 7055-B/D only)
ESD protection	±20kV IEC 61000-4-2 Air-gap Discharge / ±8kV IEC 61000-4-2 Contact Discharge
USB Device Connector	“A”-Type, gold plated; AUX port: “Micro”-Type
USB Host Connector	“B”-Type, gold plated
Output Noise @BW 20/80/500kHz (measured)	7055-B: 2.5 / 3 / 6μV 7055-C: 0.9 / 1.6 / 8.5μV 7055-D: 2.5 / 3 / 7μV
Ambient Temperature	Industrial Version: -40–80°C
Dimensions, Weight	120 x 30 x 70 mm; 300g
National Compliances	USA: FCC, European Union: CE, Australia: RCM, Canada: ICES-003

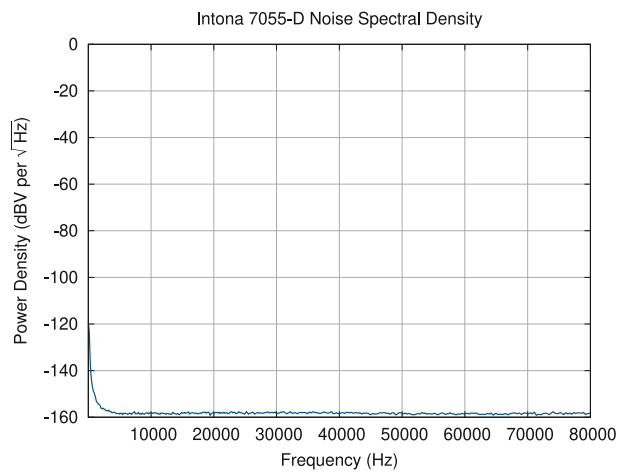
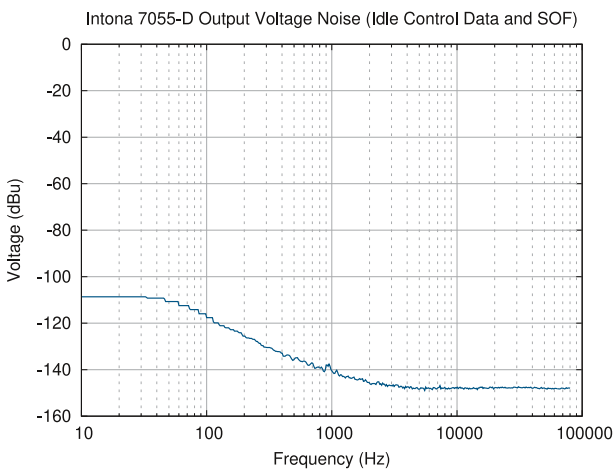
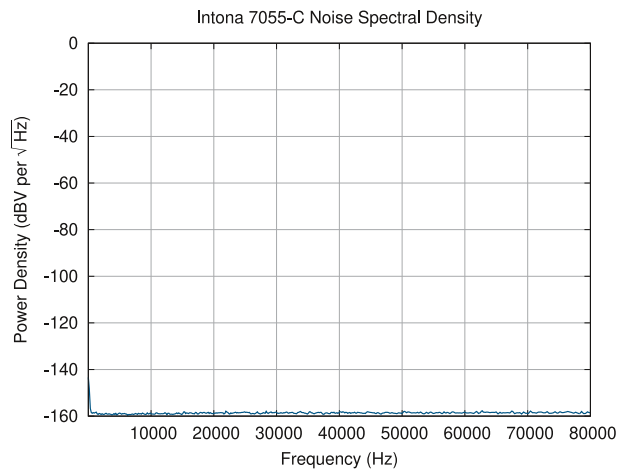
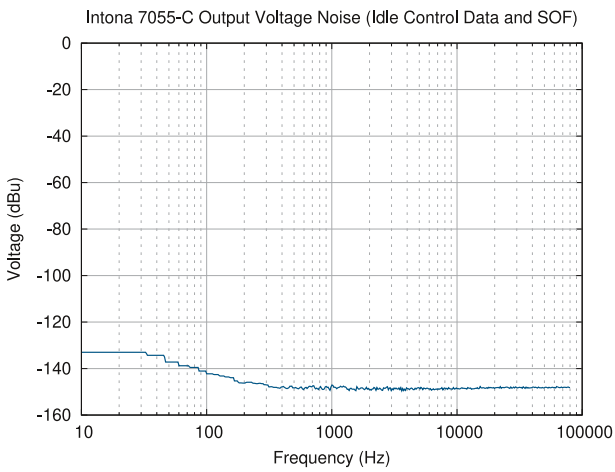
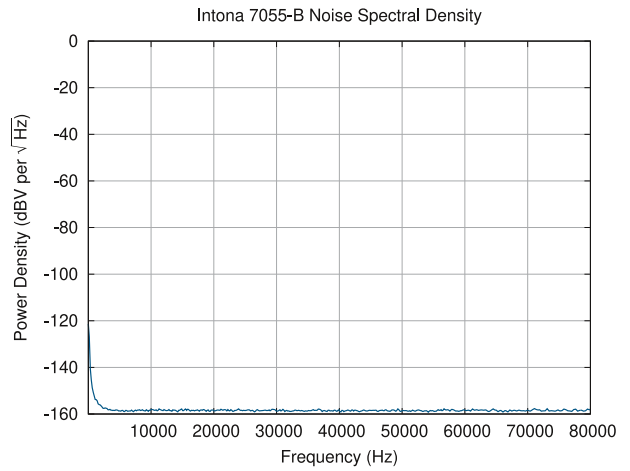
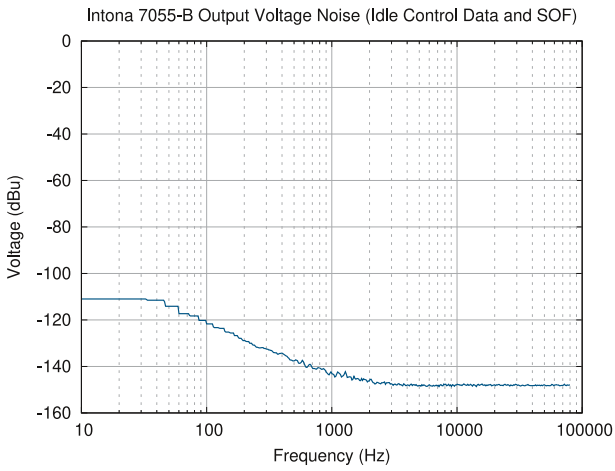
*please contact Intona for more information regarding end-system specifications requirements

Errors and technical modification subject to change. Reproduction as well as electronic duplication only with our written permission. Intona Technology assumes no responsibility for errors and omissions, and disclaims responsibility for any consequences resulting from the use of information included herein. Intona Technology makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Intona Technology assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Intona Technology products are not designed, intended, or authorized for use in applications intended to support or sustain life, or for any other application in which the failure of the Intona Technology's product could create a situation where personal injury or death may occur. Should Buyer purchase or use Intona Technology products for any such unintended or unauthorized application, Buyer shall indemnify and hold Intona Technology harmless against all claims and damages.

Developed, designed and manufactured by Intona Technology in Germany.

Intona Technology GmbH, Auweg 32, 89250 Senden, GERMANY. Phone: +49-7307-954563-0, E-Mail: mail@intona.eu

DATASHEET
7055 Series
USB 2.0/3.0 Isolators



Remarks:

- 0 dBu = 0.775 volts RMS
- SOF = start of frame symbol
- All measurements done using Audio Precision System Two

Document Revision History

- 1.1 2020-05-25 Added noise measurements
- 1.0 2020-02-10 Initial revision