

Mounting Dimensions

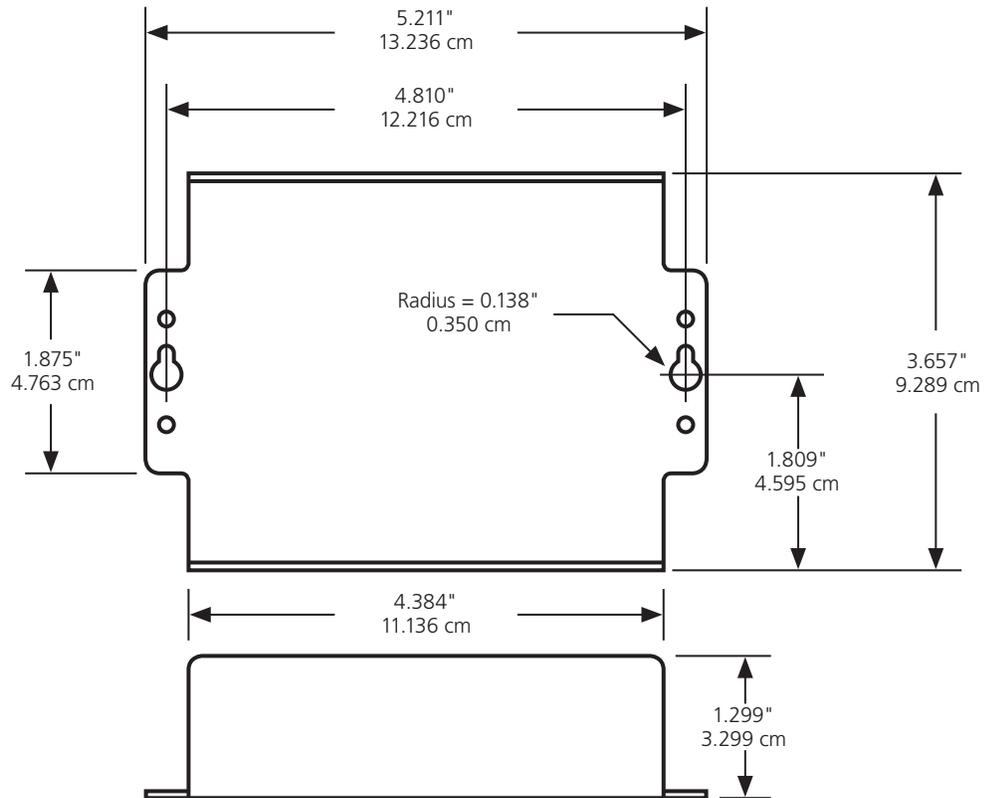


Table 1: Ordering Information

ICD114A	Serial to Multimode SC
ICD115A	Serial to Multimode ST
ICD116A	Serial to Single-mode SC



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ICD114A, rev. 1

FREE, live, 24/7 Tech Support is just 30 seconds away.
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Industrial Opto-Isolated Serial to Fiber Converters

Convert RS-232/422/485 data for extension over fiber in heavy industrial areas.

Rugged IP30-rated metal case for panel mounting



Overview

- Heavy-duty, industrial-strength serial-to-fiber converters.
- Convert serial signals for fiber transmission up to 15 kilometers (9.3 mi.)
- Rugged, IP30-rated metal case for panel mounting.
- Tolerate temperatures ranging from -40 to +185° F (-40 to +85° C).
- Designed to withstand both shock and vibration.
- Boast 2-kV triple isolation for safeguarding data and equipment.
- Support fiber ring communications with 31 other units.
- Data rates up to 115.2 kbps.

Our premium Industrial Opto-Isolated Serial to Fiber Converters are the ideal choice if you need reliable serial data extensions in heavy-industry areas.

Encased in an IP30-rated enclosure, these converters have been put through some of the most exacting tests in the industry. They provide powerful 2-kV triple isolation, protecting equipment as well as data from damaging surges and ground loops. Isolation on the power supply circuit gives you an additional degree of protection for expensive components. These levels of protection help prevent rogue currents from disrupting important data communications, such as those in factory, engineering, military, defense industry, or utility applications.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

Chapter

Specifications

Approvals — IEC 61850-3, IEEE 1613, FCC, CE, RoHS

Bias Built-in — Switchable 1.2K ohms XMT/RCV

Data Rates — 9.6–115.2 kbps

Distance (Maximum) — Multimode: 2 km (1.2 mi.);
Single-mode: 5 km (9.3 mi.)

Enclosure — IP30-rated metal, panelmount

Fiber Technology — Wavelength: Multimode or single-mode 1310 nm;
Cable: Multimode: 62.5/125 μ M; Single-mode: 9/125 μ M;
Fiber light: Modulated;
Receiver sensitivity: \leq -32 dBm

Industrial Bus — MODBUS ASCII / RTU

Insulation Resistance — \geq 500 M ohms @ 500 VDC

Isolation — 2 kV RMS, 1 minute

Maximum Torque — 5 kg/cm

MTBF — 127,103 hours;
Calculation method: parts count reliability prediction

Pitch — 5.08 mm

Surge Protection — 600 watts peak power dissipation;
Clamping time: < one pico second

Termination Built-in — Switchable 120 ohms

Wire Size Accepted — 28 to 12 AWG

Connectors — RS-232/RS-422/RS-485: 5-position, removable terminal block;
Fiber optic: (1) pair of SC

Indicators — LEDs: (1) Power, (1) TD (transmit data) on fiber, (1) RD (receive data) on fiber, (1) TD (transmit data) on copper,
(1) RD (receive data) on copper

Operating Environment — Temperature: -40 to +176° F (-40 to +80° C);
Humidity: 0 to 95%, noncondensing

Power — From an external power supply (not included);
Input: 10–48 VDC (56 VDC maximum) on 2-position terminal block (removable);
Output: Multimode: Minimum: -19 dBm; Maximum: -14 dBm;
Single-mode: Minimum: -15 dBm; Maximum: -8 dBm;
Consumption: 0.9 W typical (2.6 W with termination)

Size — 1.3"H x 3.7"W x 5.2"D (3.3 x 9.4 x 13.2 cm)

Weight — 0.5 lb. (0.2 kg)

Product Information

IEC 61850-3 Electromagnetic Interference Specifications

Test	Description		Test Level	Level
61000-4-2	ESD	Enclosure Contact	8 kV	4
		Enclosure Air	15 kV	4
61000-4-3	Radiated RFI	Enclosure Ports	10 V/m	3
61000-4-4	Burst (Fast Transient)	Signal Ports	4 kV @ 2.5 KHz	-
		DC Power Ports	4 kV	4
61000-4-5	Surge	Signal Ports	2 kV Line to Ground, 1 kV Line to Line	4
		DC Power Ports	2 kV Line to Ground, 1 kV Line to Line	3
61000-4-6	Induced (Conductive) RFI	Signal Ports	10 V RMS	3
		DC Power Ports	10 V RMS	3
61000-4-12	Damped Oscillatory	Signal Ports	2.5 kV Common, 1 kV Diff Mode @ 1 MHz	3
		DC Power Ports	2.5 kV Common, 1 kV Diff Mode @ 1 MHz	3
61000-4-16	Line Frequency Voltage	Signal Ports	30 V Continuous, 300 V for 1 s	4
		DC Power Ports	30 V Continuous, 300 V for 1 s	4
61000-4-17	Ripple on DC Power Supply	DC Power Ports	10%	3

IEEE 11613 C37 Electromagnetic Interference Specifications

Test	Description		Test Level	Level
C37.90.3	ESD	Enclosure Contact	8 kV	-
		Enclosure Air	15 kV	-
C37.90.2	Radiated RFI	Enclosure Ports	10 v/m	-
C37.90.1	Burst (Fast Transient)	Signal Ports	4 kV @ 2.5 kHz	-
		DC Power Ports	4 kV	-

Environmental Specifications

Test	Description		Test Level	Level
60068-2-1	Cold Temperature	Test Ad	-40° F (-40° C), 16 Hours	-
60068-2-2	Dry Heat	Test Bd	+176° F (+80° C), 16 Hours	-
60068-2-30	Humidity (Damp Heat Cycle)	Test Dd	90% (Noncondensing) +131° F (+55° C), 6 Cycles	-
IEC 60068-2-6	Vibration	Test Fc	4 g	Class 2
IEC 60068-2-37	Shock	Test Ea	50 g	Class 2
IEC 60068-2-32	Drop	--	6 Faces, 3 Edges, Total 10 Drops at 1 m	-