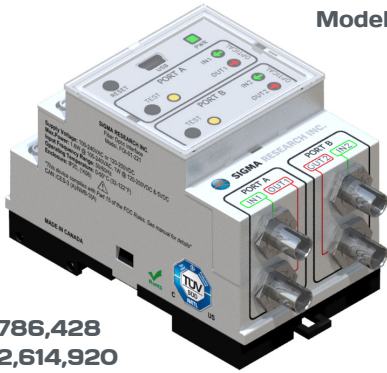


FIBER OPTIC INTERFACE

Model: FOI-01-221



US Patent: 7,786,428
CAN Patent: 2,614,920

FEATURES

1. Interfaces Fiber Optic Switches (FiberSwitch™) to electrical circuits.
2. Provides a safe optical signal sent into hazardous areas as required by IEC 60079-28 and ANSI/ISA 60079-28.
3. Equipped with two optical I/O ports and two electrical I/O ports.
4. Low power consumption (<2.0W).
5. Long distance signal transmission with no interference.
6. Immune to EMI/RFI and high voltage power lines.
7. Uses standard multimode 62.5/125µm fiber optic cable with ST connectors.

APPLICATIONS

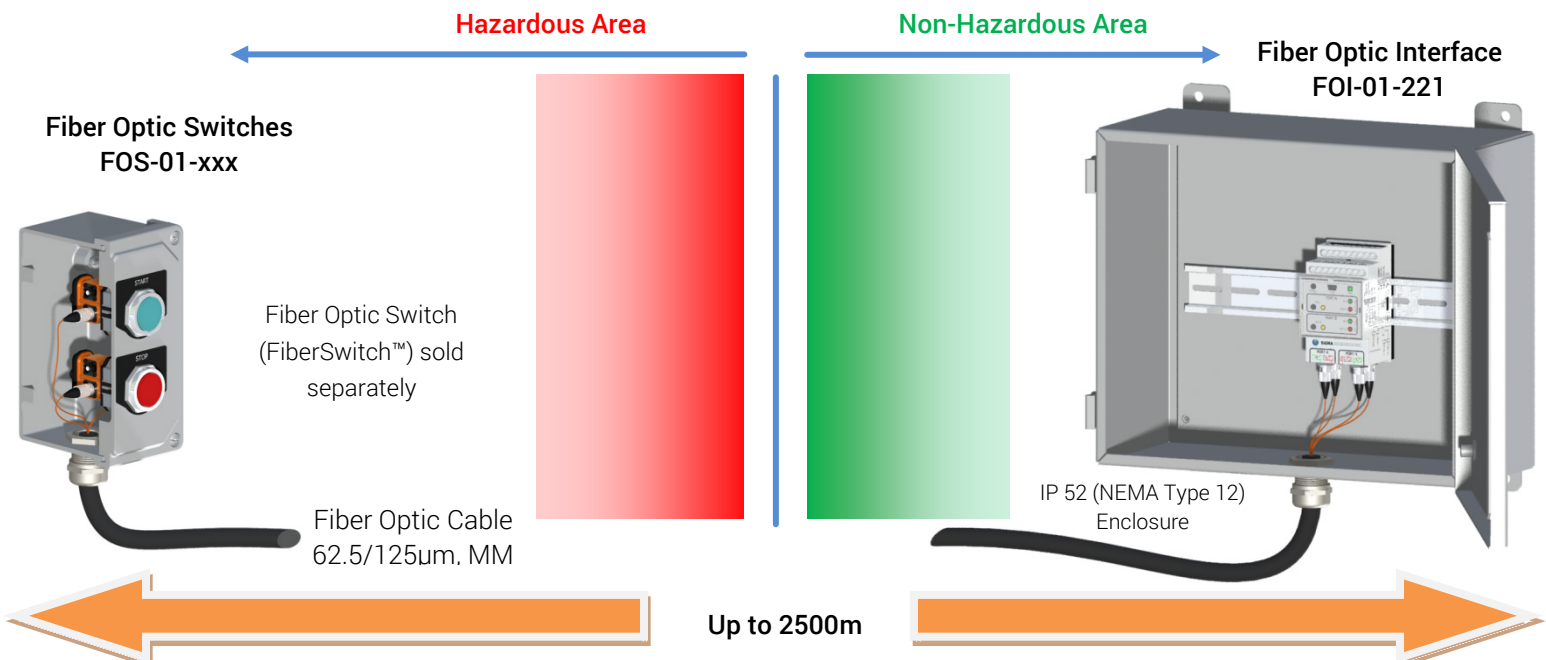
- Start-stop control of a motor, heater, MOV, etc.
- Remote breaker control or inter-tripping over long distances (<5km) using fiber optic cable.
- Emergency shutdown applications.
- Motor starter with PLC control over fiber optic cable.
(see Application manual for more details & applications)

FUNCTIONS

The FOI has many capabilities such as performing fiber optic loop tests, disabling ports, enabling a redundant mode, triggering alarms & communicating over USB and Modbus RTU. All tests and functions of the FOI can be monitored with proprietary OptiLink and OptiNet software, included with the FOI.

OVERVIEW

The Fiber Optic Interface (FOI) allows bi-directional control between continuous wave fiber optic signals and electrical signals. It was primarily designed to interface Fiber Optic Switches to electrical circuits, but can be used for other applications that require remote control over long distances. The FOI has an 8 bit microcontroller that supervises Ports A & B but it does not control their operation. The reason behind this approach was to increase reliability by keeping critical functions as simple as possible and independent of the microcontroller reliability. A failure of the microcontroller will not affect critical functions of the FOI in any way (both optical I/Os and electrical I/Os will continue to function).



SPECIFICATIONS

Supply Voltage: 100-240VAC or 120-250VDC
Max. Power: 1.6W@100-240VAC, 1W@120-250VDC & 5VDC
Input Frequency (for AC Input): 50/60Hz
Input Current (full load) 120/240VAC: 15mA/8mA
Operating Temperature Range: 0 - 50°C (32 - 122°F)
Storage Temperature Range: -20 - 70°C (-4 - 158°F)
Humidity: 20-80% RH (non-condensing)
Altitude: <2,000m
Enclosure: IP20
ANSI/ISA 60079-28: [AEx op is I/IIC/IIIC T6 60°C MaGaDa]
IEC 60079-28: [Ex op is I/IIC/IIIC T6 60°C MaGaDa]
NEC 500,505,506 (CEC): [Class I, II, III, Div. 1,2/Zone 0/Zone 20]
Reliability: MTBF - 493,847 hours (56 years) @ 25°C

Alarm

1 Form A(NO) contact
- 0.4A@200VAC
- 0.25A@24VDC
- 0.05A@125VDC

Mounting

- 35mm DIN Rail
- Panel (mounting brackets included)

USB

- Mini type B female connector
- ESD protected (4kV contact discharge, 8KV air discharge as per IEC 61000-4-2)
- Used for programming
(PC programming - OptiLink software included)

RS-485

- Modbus RTU
- ESD protected (4kV contact discharge, 8KV air discharge as per IEC 61000-4-2)

Overall Dimensions

99.5(3.91")L x 52.5(2.06")W x 58.0(2.28")H

Weight

185g (6.5oz)

Standards

UL 61010-1,
CSA 22.2 No.61010-1,
IEC 61000-6-2, IEC 61000-6-4, IEC 61010-1, IEC 61000-3-2,
IEC 60079-0, IEC 60079-28, ANSI/ISA 60079-28 IEC 60825-1,
RoHS, FCC, ICES-003, CDRH

Patents

US 7,786,428 Aug 31/2010
CANADA 2,614,920 Feb 14/2012

Electrical Inputs

2 inputs - accept external dry contact or collector output (NPN) 10mA@5VDC
ESD protected (4kV contact discharge, 8KV air discharge as per IEC 61000-4-2)

Electrical Outputs

2 outputs
1 Form A(NO) contact per output (MOV protected)
Contact Rating: 5A@240VAC, 3A@24VDC, 0.4A@125VDC
0.2@250VDC
Min. Contact Rating: 10V/10mA

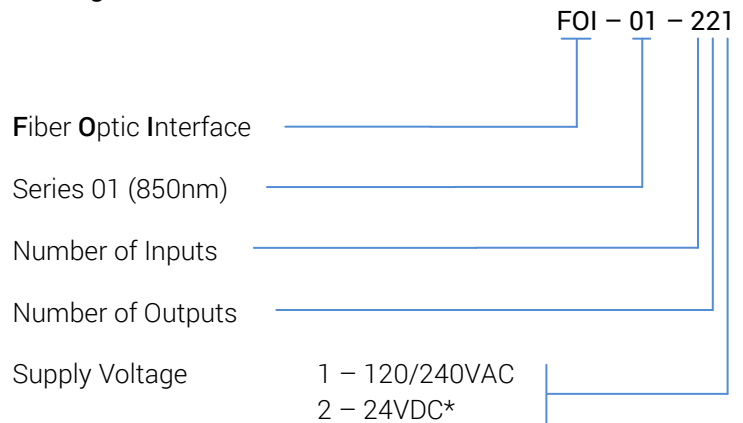
Optical Inputs

2 inputs - photodiode receiver with DC amplifier and Trigger-Schmitt
Sensitivity: min. -29dBm@850nm
Connector: ST®
MM Graded Fiber: 62.5/125µm, OM-1

Optical Outputs

2 outputs - VCSEL diodes (Class 1 laser)
Optical power: min. 0.6mW (-2.2dBm)@850nm
max. 1mW (0dBm)@850nm
Connector: ST®
MM Graded Fiber: 62.5/125µm, OM-1
Max Distance: 2500 meters
Optical Power Budget: 26.8dB

Catalog Number



*Not yet available



SIGMA RESEARCH INC.

259 Edgeley Blvd, Unit #2
Vaughan, Ontario, Canada L4K 3Y5
Tel: +1 (905) 669-6888
Fax: +1 (905) 669-6444
info@sigmaresearch.ca
www.sigmaresearch.ca