



Features

- Up to 240km range!
- Wide temperature operating range, -25 to +55°C
- Wide PSU input range, 48-250VDC or 110-250VAC
- Fiber Optical transmission, protected against external EMI and RFI
- Standards compliant for power substation installation

Usage

The 23-450 link is intended to be used for remote trip and or sensing to minimize the need for local controllers. The link is bidirectional for dual side control or sense back confirmation of command. For example a make or brake can be fed to the controller to verify the command action.

Function

The 23-450 link extends binary functions bidirectional over medium and long distances. For example transfer trip. The link is self monitored and have a local and a remote alarm signal available both as optical indications and a electrical relay output. The local alarm is latched and remote alarm is extended to ensure proper detection. The alarms have to be reset manually.

By using the bidirectional signals two units can form a permissive, blocking, or direct transfer trip. The fiber optic media allows for an error free transmission and the self correcting protocol ensures no false tripping.

Binary Inputs

The 4 binary inputs are galvanically isolated by optical couplers and connected using a pluggable Phoenix-connector for easy installation. The input voltages can be 85-150VDC or 176-300VDC depending on product version.

Binary Outputs

The 4 binary outputs are galvanic isolated by relays and connected using a pluggable Phoenix-connector for easy installation. The output contacts can make up to 30A peak and break any voltage level up to 250VDC at 0.15A.

Fiber Optical Link

The fiber optical link transfers the binary signals using a fault tolerant protocol to filter out disturbance at the inputs and on the link. The protocol works both on multimode and singelmode fiber with a maximum distance of 2km and 240km respectively.

*The 23-450 products are part of a wide **product family** of signaling, controlling and communication over fiber.*

*Fibersystem also offer **many related products** like interface, speed, and protocol converters, Teleprotection modems, multiplexers and more.*

*The 23-450 product has been **tested and approved** to be used with the product lines from ABB Power Technologies.*

Fiber Optical Link **60-00-5433, 60-00-7318**
Wavelength 1300nm MM
Fiber optical connector LC
Optical system budget 10dB in multimode fiber 62.5/125um
Typical distance 2km

Fiber Optical Link	60-00-5556, 60-00-5740	60-00-7253, 60-00-5977
Wavelength	1550nm SM	1550nm SM
Fiber optical connector	LC	LC
Optical system budget	39dB in singlemode fiber 9/125um	50dB in singlemode fiber 9/125um
Typical distance	120km	240km

Binary Inputs x 4
60-00-5433, -5740, -5977 Rated Voltage 110/125VDC ± 20% (88-150VDC). Power consumption max 0.2W/input
60-00-7318, -5556, -7253 Rated Voltage 220/250VDC ± 20% (176-300VDC). Power consumption max 0.4W/input

Binary Outputs - Relays x 4
Making capacity 30A 0.2s , 10A 1.0s
Continuous current 8A
Breaking capacity AC 250V/8A
Breaking capacity DC 48V/1A, 110V/0.4A, 220V/0.2A, 250V/0.15A

Transfer Trip Time
The propagation delay for signal on fiber is 5ns/m
2km fiber gives delay of 0.01ms
120km fiber gives delay of 0.6ms
240km fiber gives delay of 1.2ms
The delay of Binary Input is 1ms
The delay of Binary Output is ≤10ms

Power Supply
DC 48VDC to 250VDC ± 20%
AC 110VAC to 230VAC ± 20%, 50–60Hz
AC-connector IEC 320, 3 pin

Environmental
Temperature range Operating, -25 to + 55C. Storage, -40 to + 85C
Relative humidity Operating, 5 to 95% . Storage, 5 to 95% non condensing

Designed to meet CE compliance (Immunity) EN 61000-6-2, EN 61000-6-4, EN 50178

Designed to meet Mechanical (Vibration) IEC 60255-21-1, IEC 60255-21-2, IEC 60255-21-3

Designed to meet EMC compliance IEC60255-22-1, IEC 60255-22-2, IEC 60255-22-3, IEC 60255-22-4

Designed to meet Insulation IEC 60255 / EN 50178 , IEC 60255-5, IEC 60255-5

Dimensions and Weight
Physical size Height 45mm, Width 483mm (without brackets 380mm), Depth 173mm
Weight 3kg

Ordering information

Product number	Description	Wavelength	Distance (up to)
60-00-5433	Fiber Optical Trip Link BI:110V. 10dB up to 2km	1300 nm MM	2km
60-00-7318	Fiber Optical Trip Link BI:220V. 10dB up to 2km	1300 nm MM	2km
60-00-5556	Fiber Optical Trip Link BI:220V. 39dB up to 120km	1550 nm SM	120km
60-00-5740	Fiber Optical Trip Link BI:110V. 39dB up to 120km	1550 nm SM	120km
60-00-7253	Fiber Optical Trip Link SFP BI: 220V 50dB up to 240km	1550 nm SM	240km
60-00-5977	Fiber Optical Trip Link SFP BI: 110V 50dB up to 240km	1550 nm SM	240km