



# BZ958

## Four-Channel Opto-Isolator for Unidirectional Digital Signals



*\* Device appearance may change based on the specific variant ordered. Mating connector not included in scope of delivery.*

Functionality and Features .....	2
Device Variants.....	3
Environment.....	3
Fire Protection .....	3
Technical Data .....	4
Other Information.....	5



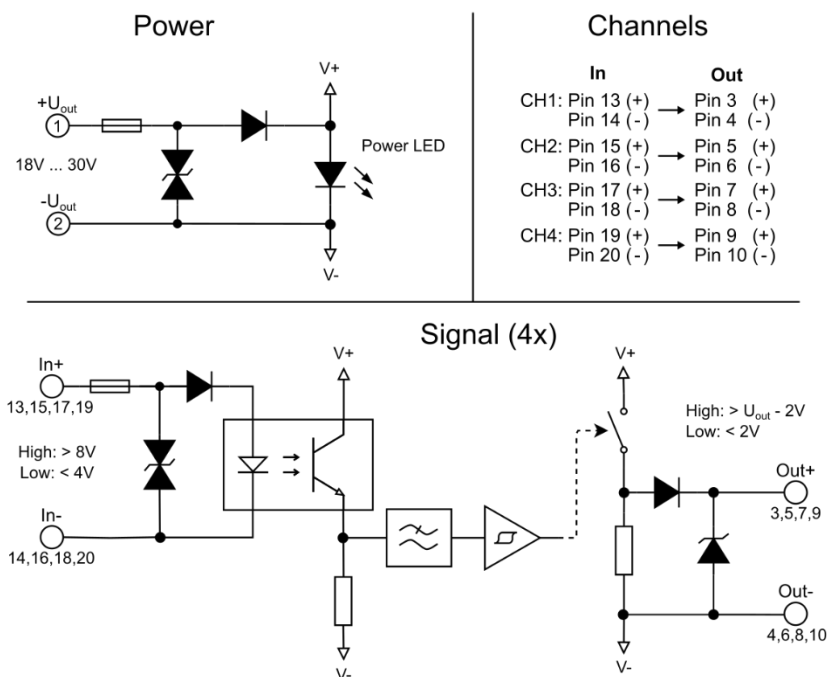
**B+Z Elektronik AG**  
Switzerland

CH-8108 Daellikon  
Tel: +41 (0)44 844 03 55  
[www.bz-elektronik.ch](http://www.bz-elektronik.ch)  
[admin@bz-elektronik.ch](mailto:admin@bz-elektronik.ch)



ISO 9001  
Certified  
Quality Management System  
[www.tuvsud.com/ms-cert](http://www.tuvsud.com/ms-cert)

## Functionality and Features



### Inputs

The device features four signal channels, each designed to transmit a unidirectional digital signal of a limited bandwidth. The channels are completely independent and galvanically isolated from each other on the input side. Input separation is guaranteed up to a potential differential of 320V between channels. Each input is protected from transient voltages and accidental reversal of polarity. Check the device variant table for details on voltage thresholds and max. permitted levels.

### Outputs

On the output side all channels share the common potential of the device's power. Isolation between any input and output is designed to withstand voltages of up to 1.5kV. Each output can reach the level of the supply voltage - 2V when high and is guaranteed to fall below 2V when low. Output current is limited to 20mA per channel. The current sinking capacity is very limited while the output is low and it is recommended to use a receiver with integrated current sinking capability, e.g., a pull-down resistor.

### Power

An external DC voltage powers the internal logic and output stages. The device is protected against transient voltages and accidental reversal of polarity.



B+Z Elektronik AG  
Switzerland

Created: 23.03.2023  
Changed: 05.10.2023

Page: 2/6

BZ958  
Four-Channel Opto-Isolator for Unidirectional Digital Signals

## Device Variants

Designation	Art. No.	Max. Supply Voltage Range	Input High Threshold	Input Low Threshold	Max. Input Voltage	Max. Band-width
BZ958-1	210	18.0V ... 30.0V	> 8.0V	< 4.0V	20.0V	1kHz

## Environment

Stresses exceeding these limits may lead to device malfunction or damage.

### General

Height above sea level	<b>AX (max. 2000m)</b>	(EN 50125-1:2014 Tab. 1)
Operational temperature	<b>OT3 (-25°C to +70°C)</b>	(EN 50155:2017 Tab. 1)
Temperature rise on power on	<b>ST1</b>	(EN 50155:2017 Tab. 2)
Fast temperature changes	<b>H1</b>	(EN 50155:2017 Tab. 3)
Vibration and shock	<b>Kat. 1, Class B</b>	(EN 61373:2010)
Dirt and condensation	<b>PD2 (light / non-conducting)</b>	(EN 50124-1:2017 Tab. A.4)

### Electrical

Nominal supply voltage(s) / V	<b>(see device variant table)</b>
Interruption class	<b>S1 (none)</b>
Electromagnetic compatibility	<b>EN 50121-3-2:2016</b>

## Fire Protection

(Evaluated as grouped components according to EN 45545-2:2020)

	mounted inside of vehicle			mounted outside of vehicle		
	<b>HL1</b>	<b>HL2</b>	<b>HL3</b>	<b>HL1</b>	<b>HL2</b>	<b>HL3</b>
Combustible mass	0 g	0 g	0 g	0 g	0 g	0 g

A detailed report as well as test certificates are available upon request.



**B+Z Elektronik AG**  
Switzerland

Created: 23.03.2023  
Changed: 05.10.2023

Page: 3/6

**BZ958**  
**Four-Channel Opto-Isolator for Unidirectional Digital Signals**

## Technical Data

### Power Supply

Power consumption	<0.3 W typ.
Inrush current	<= 50 mA
Transient protection	EN 50121-3-2:2016

### Signal Input

Input current at high threshold	5 mA typ.
Positive switching threshold	(see device variant table)
Negative switching threshold	(see device variant table)
Permissible overvoltage	(see device variant table)
Transient protection	EN 50121-3-2:2016
Insulation input to input	320VDC / 1 min
Insulation input to output	1.5kVDC / 1 min
Filter cut-off frequency	(see device variant table)

### Signal Output

Current sourcing limit when output is high	20 mA typ.
Current sinking limit when output is low	< 0.1 mA typ.
Voltage when output is high	> Supply Voltage - 2V
Voltage when output is low	< 2.0V
Output rise time (90%)	> 50 µs
Output fall time (10%)	> 50 µs

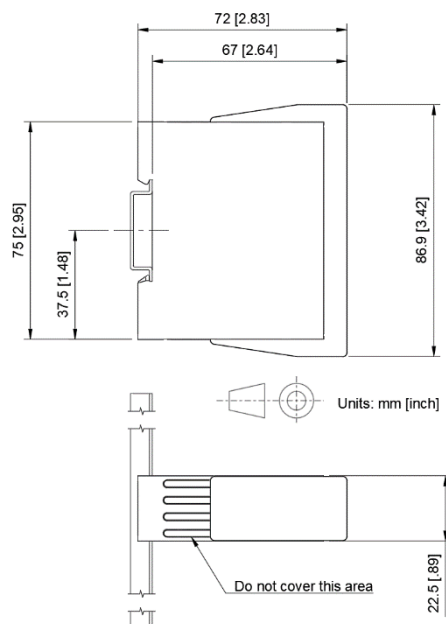
### Insulation Data

Circuitry to DIN-rail or neighboring device	1.5 kVDC / 1 min
---	------------------

### Mechanical Data

Weight	60 g
Mounting options	35 mm DIN rail
Mounting position	any
Mounting distances:	
sides	none
top / bottom	5 mm
Housing material:	
body	PC
cover	PA66

### Dimensions



B+Z Elektronik AG  
Switzerland

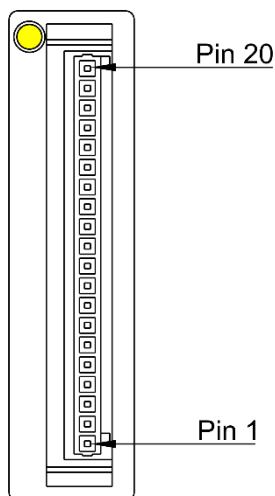
Created: 23.03.2023  
Changed: 05.10.2023

Page: 4/6

BZ958  
Four-Channel Opto-Isolator for Unidirectional Digital Signals

## Other Information

### Front Panel



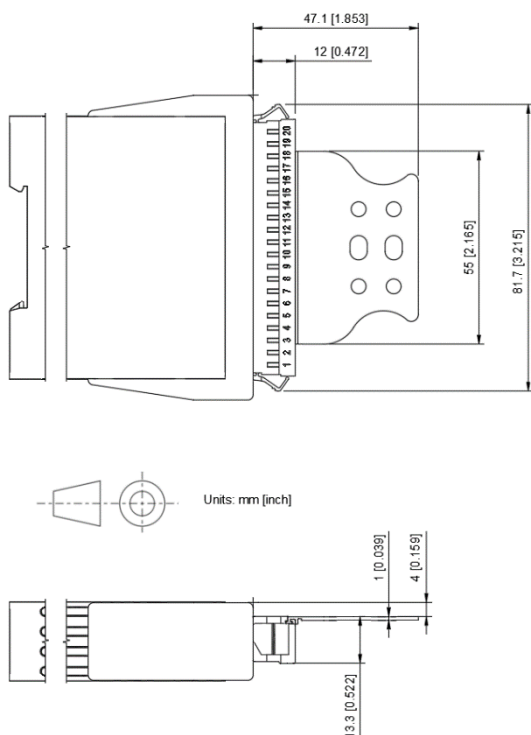
#### LED:

A yellow LED on the front panel indicates presence of supply voltage.

#### Connector:

20 pin 3.5mm pitch female WAGO receptacle of Series 734, compatible with side-locking clips.

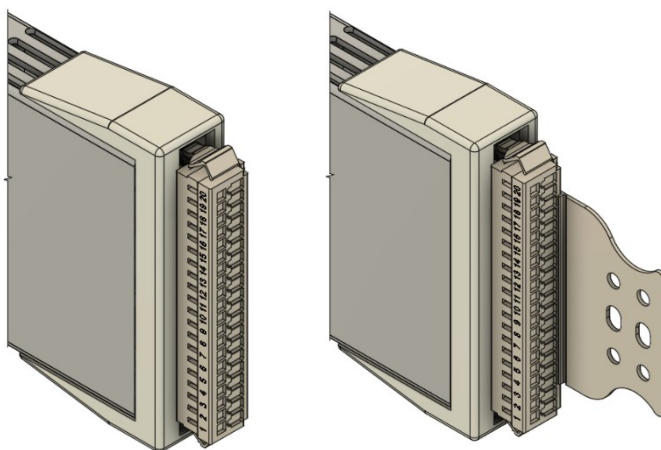
### Recommended Mating Connector



For most applications we recommend using a single row connector with side-locking clips and a strain relief plate. For applications with limited space there is a connector without strain relief plate available. Connectors ordered from B+Z are delivered with printed numbers to indicate pins 1 through 20.

With strain relief plate: Art. Nr. 3144

Without strain relief plate: Art. Nr. 2910



B+Z Elektronik AG  
Switzerland

Created: 23.03.2023  
Changed: 05.10.2023

Page: 5/6

BZ958  
Four-Channel Opto-Isolator for Unidirectional Digital Signals

## Changes to this document

Date	Paragraph	Change
05.10.2023	Functionality and Features	Adjusted block diagram to better reflect internal structure of the device. Device functionality is not affected.



**B+Z Elektronik AG**  
**Switzerland**

Created: 23.03.2023  
Changed: 05.10.2023

Page: 6/6

**BZ958**  
**Four-Channel Opto-Isolator for Unidirectional Digital Signals**