

## Technical data sheet

### Fiber optic amplifier

Part no.: 50154180  
LV453B/2

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Operation and display
- Part number code



For illustration purposes only



## Technical data

### Basic data

|              |                      |
|--------------|----------------------|
| Series       | 453B                 |
| Suitable for | Plastic fiber optics |

### Special version

|                 |                       |
|-----------------|-----------------------|
| Special version | Large operating range |
|                 | Time function         |

### Optical data

|                          |                    |
|--------------------------|--------------------|
| Light source             | 4 element LED, Red |
| Wavelength               | 625 nm             |
| Transmitted-signal shape | Pulsed             |

### Electrical data

|                              |                              |
|------------------------------|------------------------------|
| Protective circuit           | Polarity reversal protection |
|                              | Short circuit protected      |
| Fiber optic connection       | Clamp, 2 x Ø 2.4mm           |
| Fiber optic connection depth | 7 ... 9 mm                   |

### Performance data

|                      |                        |
|----------------------|------------------------|
| Supply voltage $U_B$ | 12 ... 24 V, DC        |
| Residual ripple      | 0 ... 10 %, From $U_B$ |
| Open-circuit current | 0 ... 15 mA            |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                         |                          |
|-------------------------|--------------------------|
| Type                    | Digital switching output |
| Voltage type            | DC                       |
| Switching current, max. | 100 mA                   |
| Switching voltage       | high: $\geq(U_B - 2.5V)$ |
|                         | low: $\leq 2.5 V$        |

### Switching output 1

|                     |                       |
|---------------------|-----------------------|
| Switching element   | Transistor, NPN       |
| Switching principle | Light/dark switchable |

### Time behavior

|                      |                      |
|----------------------|----------------------|
| Switch-on/-off delay | Switch-on/-off delay |
| Readiness delay      | 300 ms               |
| Wiping contact       | Wiping contact       |

### Mode Super High Speed (SHS)

|                     |            |
|---------------------|------------|
| Switching frequency | 12,500 Hz  |
| Response Time       | 40 $\mu$ s |

### Mode High Speed (HS)

|                     |             |
|---------------------|-------------|
| Switching frequency | 2,000 Hz    |
| Response Time       | 250 $\mu$ s |

### Mode Standard (STD)

|                     |               |
|---------------------|---------------|
| Switching frequency | 500 Hz        |
| Response Time       | 1,000 $\mu$ s |

### Mode Long Range (LR)

|                     |                |
|---------------------|----------------|
| Switching frequency | 27 Hz          |
| Response Time       | 18,000 $\mu$ s |

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

### Connection 1

|                      |                      |
|----------------------|----------------------|
| Function             | Signal IN            |
|                      | Signal OUT           |
|                      | Voltage supply       |
| Type of connection   | Cable                |
| Cable length         | 2,000 mm             |
| Cable color          | Black                |
| Number of conductors | 3 -wire              |
| Wire cross section   | 0.14 mm <sup>2</sup> |

### Mechanical data

|                       |                              |
|-----------------------|------------------------------|
| Design                | Cubic                        |
| Dimension (W x H x L) | 10 mm x 34 mm x 72 mm        |
| Housing material      | Plastic                      |
| Plastic housing       | ABS                          |
| Net weight            | 45 g                         |
| Housing color         | Black                        |
|                       | Red                          |
| Type of fastening     | Via optional mounting device |

### Operation and display

|                                     |                            |
|-------------------------------------|----------------------------|
| Type of display                     | LED                        |
| Number of LEDs                      | 1 Piece(s)                 |
| Operational controls                | Push button                |
| Function of the operational control | Light/dark switching       |
|                                     | Sensitivity adjustment     |
|                                     | Switching range adjustment |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -10 ... 55 °C |
| Ambient temperature, storage   | -25 ... 75 °C |

### Certifications

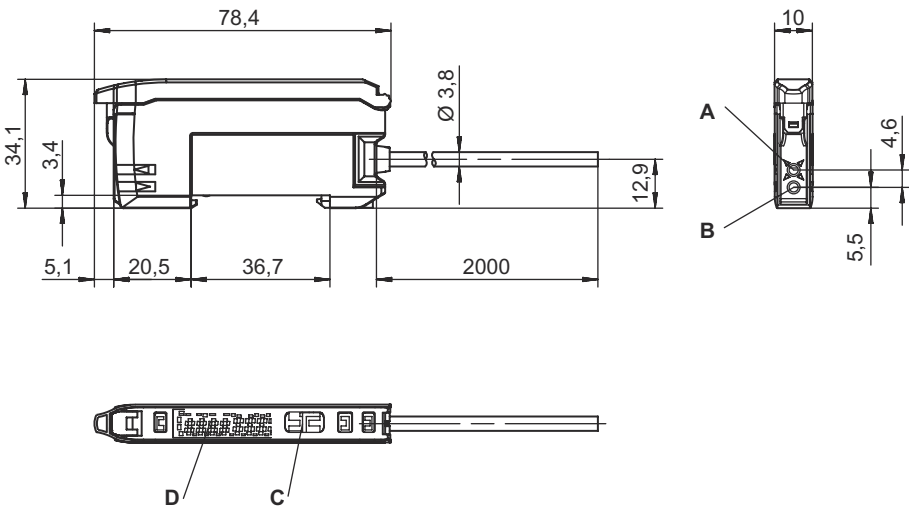
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 50         |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85423390 |
| ECLASS 5.1.4          | 27270905 |
| ECLASS 8.0            | 27270905 |
| ECLASS 9.0            | 27270905 |
| ECLASS 10.0           | 27270905 |
| ECLASS 11.0           | 27270905 |
| ECLASS 12.0           | 27270905 |
| ECLASS 13.0           | 27270905 |
| ECLASS 14.0           | 27270905 |
| ECLASS 15.0           | 27270905 |
| ECLASS 16.0           | 27270905 |
| ETIM 5.0              | EC002651 |
| ETIM 6.0              | EC002651 |
| ETIM 7.0              | EC002651 |
| ETIM 8.0              | EC002651 |
| ETIM 9.0              | EC002651 |
| ETIM 10.0             | EC002651 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

|                      |                |
|----------------------|----------------|
| Function             | Signal IN      |
|                      | Signal OUT     |
|                      | Voltage supply |
| Type of connection   | Cable          |
| Cable length         | 2,000 mm       |
| Cable color          | Black          |
| Number of conductors | 3 -wire        |
| Wire cross section   | 0.14 mm²       |

Conductor color

Conductor assignment

|       |     |
|-------|-----|
| Brown | V+  |
| Blue  | GND |
| Black | OUT |

Operation and display

| LED | Display | Meaning |
|-----|---------|---------|
|-----|---------|---------|

|   |                          |                                  |
|---|--------------------------|----------------------------------|
| 1 | Orange, continuous light | Switching output/switching state |
|---|--------------------------|----------------------------------|

Part number code

Part designation: AAAAAAB.CC/DD-EEEEEE

|        |                                                                                                                                                                                |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAAAAA | Operating principle / construction<br>LV453B: Fiber Optic Amplifier - Standard (Light/Dark Switchable)<br>LV443B: Fiber Optic Amplifier - Basic/Manual (Light/Dark Switchable) |
| B      | Light source<br>n/a: 4 Element LED, red light                                                                                                                                  |

Part number code

|        |                                                                                                                                                                            |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CC     | <b>Device type</b><br>n/a: Inclusive (High Speed, Long Range)<br>XR: Long Range version                                                                                    |
| DD     | <b>Switching output / function / OUT = pin 4 (Black wire)</b><br>4: PNP transistor output, light switching<br>2: NPN transistor output, light switching<br>X: pin not used |
| EEEEEE | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 3-wire<br>100-M8: cable, length 100 mm with M8 connector, 4-pin, axial (plug)                         |

| Note                                                                             |                                                                                                                                |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|  | A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> . |