

Technical data sheet

Safety relay

Part no.: 50143342

LBK Controller

Contents

- Technical data
- Electrical connection
- Operation and display
- Accessories



Figure can vary



Technical data

Basic data

| | |
|--------|-----------------------------|
| Series | LBK-C22-LZ |
| Type | Controller for radar sensor |

Functions

| | |
|-----------|---|
| Functions | Automatic start/restart |
| | Contactormonitoring (EDM) |
| | Muting |
| | Start/restart interlock (RES), selectable |
| Restart | Automatic |
| | Manual |

Characteristic parameters

| | |
|-----------------------------|---------------------------------------|
| SIL | 2, IEC 61508 |
| SILCL | 2, IEC/EN 62061 |
| Performance Level (PL) | d, EN ISO 13849-1 |
| MTTF _d | 40 years, EN ISO 13849-1 |
| PFH _d | 4,34E-08 per hour |
| Mission time T _M | 20 years, EN ISO 13849-1 |
| Category | 2 (3 for all outputs), EN ISO 13849-1 |

Electrical data

| | |
|--------------------|---|
| Protective circuit | External power supply unit with integrated short circuit protection |
| | Overcurrent through integrated resettable fuse (max. 5s at 8A) |

Performance data

| | |
|--------------------------------------|-----------------------|
| Supply voltage U _B | 20 ... 28 V, DC |
| Current consumption, additional note | Without external load |
| Power consumption, max. | 3.8 W |

Inputs

| | |
|------------------------------------|------------|
| Number of digital switching inputs | 3 Piece(s) |
|------------------------------------|------------|

Switching inputs

| | |
|-------------------------|-------------------------|
| Type | Digital switching input |
| Switching voltage, typ. | 24 V |
| Voltage type | DC |

Outputs

| | |
|--|------------|
| Number of safety-related switching outputs (OSSDs) | 1 Piece(s) |
| Number of digital switching outputs | 2 Piece(s) |

Safety-related switching outputs

| | |
|---------------------------|--------------------------------------|
| Type | Safety-related switching output OSSD |
| Max. switching voltage DC | 30 V |
| Voltage type | DC |
| Switching current, max. | 8,000 mA |

Safety-related switching output 1

| | |
|-------------------|-----------|
| Switching element | Relay, NO |
|-------------------|-----------|

Switching outputs

| | |
|-------------------|--------------------------|
| Type | Digital switching output |
| Voltage type | DC |
| Switching voltage | Max. 30 V DC |

Switching output 1

| | |
|---------------------|--------------------|
| Switching element | Relay, NO |
| Switching principle | NO (normally open) |

Switching output 2

| | |
|---------------------|----------------------------|
| Switching element | Relay, NO |
| Switching principle | NO (normally open) |
| Function | Auxiliary switching output |

Timing

| | |
|--------------------------------------|--------|
| Restart delay time (automatic start) | 100 ms |
|--------------------------------------|--------|

Connection

| | |
|-----------------------|------------|
| Number of connections | 6 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|--------------------|----------------|
| Function | Voltage supply |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 3 -pin |

Connection 2

| | |
|--------------------|----------------|
| Function | Signal IN |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 8 -pin |

Connection 3

| | |
|--------------------|----------------|
| Function | SAFETY OUT |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

Connection 4

| | |
|--------------------|----------------|
| Function | Signal OUT |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

Connection 5

| | |
|--------------------|----------------|
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

Connection 6

| | |
|--------------------|-------------------------|
| Function | Configuration interface |
| Type of connection | USB |
| Connector type | micro USB |

Mechanical data

| | |
|-----------------------|---------------------------------------|
| Dimension (W x H x L) | 92.6 mm x 46.5 mm x 166.25 mm |
| Housing material | Plastic |
| Net weight | 250 g |
| Housing color | Black |
| Type of fastening | DIN rail mounting Snap-on mounting |

Operation and display

| | |
|----------------|-------------|
| Number of LEDs | 16 Piece(s) |
|----------------|-------------|

Technical data

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage | -40 ... 80 °C |

Certifications

| | |
|----------------------|-------|
| Degree of protection | IP 20 |
| Protection class | II |
| Certifications | IMQ |
| | UL |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85371098 |
| eCl@ss 5.1.4 | 27371800 |
| eCl@ss 8.0 | 27371819 |
| eCl@ss 9.0 | 27243101 |
| eCl@ss 10.0 | 27371819 |
| eCl@ss 11.0 | 27371819 |
| ETIM 5.0 | EC001449 |
| ETIM 6.0 | EC001449 |
| ETIM 7.0 | EC001449 |

Electrical connection

Connection 1

| | |
|--------------------|----------------|
| Function | Voltage supply |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 3 -pin |

Pin Pin assignment

| | |
|---|----------|
| | + |
| 1 | +24 V DC |
| | E |
| 2 | PE |
| | - |
| 3 | GND |

Connection 2

| | |
|--------------------|----------------|
| Function | Signal IN |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 8 -pin |

Pin Pin assignment

| | |
|---|---------------|
| | Type 1 |
| 1 | Input 24 V DC |
| | Type 1 |
| 2 | Input 24 V DC |
| | Type 2 |
| 3 | Input 24 V DC |
| | Type 2 |
| 4 | Input 24 V DC |
| | Type 3 |
| 5 | Input 24 V DC |

Electrical connection

| Pin | Pin assignment |
|-----|-----------------------------------|
| | Type 3 |
| 6 | Input 24 V DC SNS |
| 7 | Input 24 V DC, diagnostics GND |
| 8 | GND |

Connection 3

| | |
|--------------------|----------------|
| Function | SAFETY OUT |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

| Pin | Pin assignment |
|-----|-----------------------|
| | COM |
| 1 | Safety output 1 NO |
| 2 | Relay output 1 COM |
| 3 | Safety output 2 NO |
| 4 | Relay output 2 |

Connection 4

| | |
|--------------------|----------------|
| Function | Signal OUT |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

| Pin | Pin assignment |
|-----|--------------------------|
| | COM |
| 1 | Auxiliary output 1 NO |
| 2 | Relay output 1 COM |
| 3 | Auxiliary output 2 NO |
| 4 | Relay output 2 |

Connection 5

| | |
|--------------------|----------------|
| Function | BUS OUT |
| Type of connection | Terminal |
| Type of terminal | Screw terminal |
| No. of pins | 4 -pin |

Electrical connection

| Pin | Pin assignment |
|-----|----------------|
| | + |
| 1 | +12 V DC |
| | H |
| 2 | CAN H |
| | L |
| 3 | CAN L |
| | - |
| 4 | GND |

Connection 6

| | |
|--------------------|-------------------------|
| Function | Configuration interface |
| Type of connection | USB |

Operation and display

| LED | Display | Meaning | |
|-----|-------------|--------------------------|--|
| 1 | 1-1 ... 3-2 | Green, continuous light | Logical input level HIGH |
| 2 | S1 ... S6 | Green, continuous light | Normal operation, no movement detected |
| 3 | S1 ... S6 | Orange, continuous light | Normal operation, movement detected |
| 4 | S1 ... S6 | Red, flashing | Sensor error |
| 5 | K_SAFE1 | Green, continuous light | Relay K_SAFE1 picked up |
| 6 | K_SAFE2 | Green, continuous light | Relay K_SAFE2 picked up |
| 7 | K_AUX1 | Green, continuous light | Relay K_AUX1 picked up |
| 8 | K_AUX2 | Green, continuous light | Relay K_AUX2 picked up |

Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|---------------------|------------------|--|
| | 50143389 | KD DN-M12-5W-P1-150 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 5 -pin Connection 2: Open end Shielded: Yes Cable length: 15,000 mm Sheathing material: PUR |

Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|--|----------|-----------------------------|-----------------------|--|
| | 50143385 | KDS DN-M12-5W-M12-5W-P3-030 | Interconnection cable | Suitable for interface: DeviceNet, CANopen Connection 1: Connector, M12, Angled, Male, A-coded, 5 -pin Connection 2: Connector, M12, Angled, Female, A-coded, 5 -pin Shielded: Yes Cable length: 3.000 mm Sheathing material: PUR |
| | 50143386 | KDS DN-M12-5W-M12-5W-P3-050 | Interconnection cable | Suitable for interface: DeviceNet, CANopen Connection 1: Connector, M12, Angled, Male, A-coded, 5 -pin Connection 2: Connector, M12, Angled, Female, A-coded, 5 -pin Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |

Accessories

| | Part no. | Designation | Article | Description |
|--|----------|----------------------------|-----------------------|---|
| | 50143459 | KSS US-USB2-A-mic-B-V0-018 | Interconnection cable | Suitable for interface: USB Connection 1: USB Connection 2: USB Cable length: 1,800 mm |

Connection technology - Terminating resistors

| | Part no. | Designation | Article | Description |
|--|----------|-------------|-----------------|---|
| | 50040099 | TS 01-5-SA | Terminator plug | Suitable for: DeviceNet, CANopen Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin Function: Bus termination |

Mounting technology - Other

| | Part no. | Designation | Article | Description |
|--|----------|----------------------|---------------------|--|
| | 50143343 | LBK Sensor | Safety radar sensor | Response time: 100 ms Connection: Cable with connector, M12, Metal, 5 -pin |
| | 50143346 | LBK Sensor Protector | Shielding | Dimensions: 54.5 mm x 90 mm x 192 mm Color: Black Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal |

Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.