

Technical data sheet

Safety relay

Part no.: 50143342

LBK Controller

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Figure can vary



Technical data

Basic data

Series	LBK-C22-LZ
Type	Controller for radar sensor

Functions

Functions	Automatic start/restart
	Muting
	Start/restart interlock (RES), selectable
	Synchronization of controllers
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)
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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

Assignment	Connection 1, pin 1/13
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

Time behavior

Decay time	100 ms
Restart delay time (automatic start)	100 ms

Connection

Number of connections	6 Piece(s)
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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

Function	BUS OUT
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

Technical data

Operation and display

Type of display	LED
Number of LEDs	16 Piece(s)

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
ECLASS 5.1.4	27371800
ECLASS 8.0	27371819
ECLASS 9.0	27243101
ECLASS 10.0	27371819
ECLASS 11.0	27371819
ECLASS 12.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449
ETIM 8.0	EC001449

Electrical connection

Connection 1

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

Terminal

Assignment

+	+24 V DC
E	PE
-	GND

Connection 2

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

Terminal

Assignment

Type 1	Input 24 V DC
Type 1	Input 24 V DC
Type 2	Input 24 V DC
Type 2	Input 24 V DC
Type 3	Input 24 V DC
Type 3	Input 24 V DC
SNS	Input 24 V DC, diagnostics
GND	GND

Connection 3

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

Electrical connection

Terminal	Assignment
COM	Safety output 1
NO	Relay output 1
COM	Safety output 2
NO	Relay output 2

Connection 4

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

Terminal	Assignment
COM	Auxiliary output 1
NO	Relay output 1
COM	Auxiliary output 2
NO	Relay output 2

Connection 5

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

Terminal	Assignment
+	+12 V DC
H	CAN H
L	CAN L
-	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 Connector, LED: No 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
	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 Function: Bus termination Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin

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

Accessories

	Part no.	Designation	Article	Description
	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.