

MAK - Non-Contact Magnetic Safety System

Magnetic controllers for safety functions

BERNSTEIN offers magnetic controllers for safety functions that fulfill performance level PLd according to EN 13849-1 and SIL 3 according to EN 61508 or EN 62061.

A safety system consists of the safety magnetic controllers and a coded transducer unit.

The anti-tamper security of the transducer unit is achieved by variable coding of the actuator magnets and magnetic switches.

The safety magnetic controller processes the NC or NO contact signals coming from the coded magnetic switches. Thereby, it is possible to detect the opening of the safety guard (door, hatch, protective hood etc.) and to turn off the safety output. Thanks to the redundant evaluation, the magnetic controller is switched to the "safe state" should a fault or manipulation occur, or if the time difference is exceeded between the NC contact signal and the NO contact signal. An LED indicates that the safety magnetic controller is in the "safe state".

To ensure fault detection of the switch-off device, the MÜZ-102 offers the possibility to connect a return circuit. The system additionally features a NC contact for signaling purposes.

- Redundancy by NO and NC contacts
- Manipulation safety by coding
- Monitoring of the return circuit (depending on device type)



Depending on the type of device, one or two coded transducer units (magnetic switch with corresponding magnet) of type:

- MAK-4236
- MAK-5236
- MAK-5336

can be connected to and monitored by the safety magnetic controllers.



MAK-4236-x with magnet TK-42-CD



MAK-5236-x with magnet TK-52-CD / 2



MAK-5336-x with magnet TK-43-CD

MUZ - Non-Contact Magnetic Switch Controllers

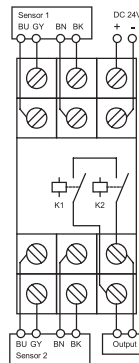
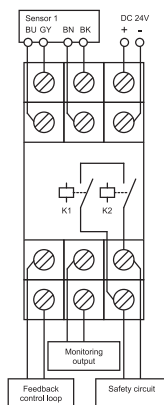
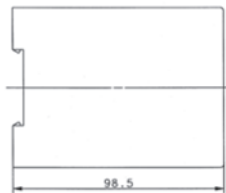
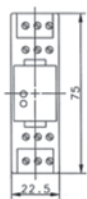


- EN ISO 13849-1 Performance Level PL d
- EN 61508 and EN 62061 SIL 3
- EN 60947-5-3 Single fault security S
- TÜV certified

Type designation	MÜZ-102/D24-FL-DA	MÜZ-202/D24-FL
Article number	639.2701.306	639.2702.307
Max. number of connect-able transducer units	1	2
Safety output, NO contact	☒	☒
Feedback circuit	☒	-
Data output (NC contact)	☒	-
Technical data		
Operating voltage	24 V DC	24 V DC
Operating current	60 mA	60 mA
Switching capacity, safety output		
Switching voltage	max AC 250 V	AC 250 V
Switching current	max 8 A	8 A
Switching power	max 1700 VA	1700 VA
LED: Hazard status/switching status	☒/-	☒/-
LED: Supply voltage/ON	☒	-
Relay: Positive-action/standard	☒/-	☒/-
Ambient conditions		
Temperature range	min/max 0 °C/+55 °C	0 °C/+55 °C
	32 °F/+131 °F	32 °F/+131 °F
Protection class (to IEC 529, EN 60529)	IP20	IP20
Enclosure material	PC	PC
Mounting system (DIN 50022)	TS 35	TS 35
Type of connection: Terminal block	max. 2.5 mm ²	max. 2.5 mm ²

Coded transducer units for magnetic switches

Type designation	
Article number	
Cable length	
Type designation	
Article number	
Cable length	
Type designation	
Article number	
Cable length	
Type designation	
Article number	
Cable length	
Type designation	
Article number	
Cable length	
Ambient conditions	
Temperature range	min/max
Protection class (to IEC 529, EN 60529)	
Enclosure material	
Sensing distance	S on min
	S on max
Actuating magnet	
Type designation	
Article number	
Use: safety magnetic controller	
Article number	



All dimensions in mm

Other types available on request.

MAK - Non-Contact Magnetic Switches



Switch

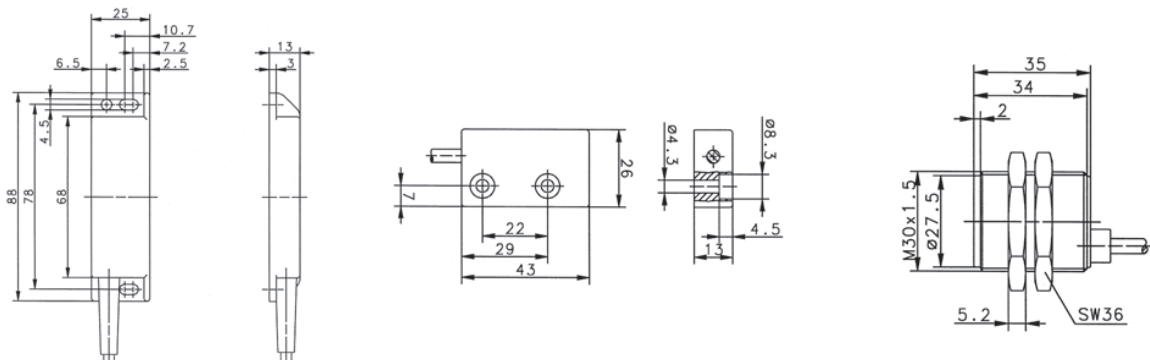
Standard Version	New UL Version	Standard Version	New UL Version	Standard Version	New UL Version
MAK-4236-3 649.0642.315 3 m PVC cable	MAK-4236-BCD-3 649.0642.315 3 m PVC cable	MAK-5236-3 649.0652.316 3 m PVC cable	MAK-5236-BCD-3 649.0652.327 3 m PVC cable	MAK-5336-3 649.0653.317 3 m PVC cable	MAK-5336-BCD-3 649.0653.323 3 m PVC cable
MAK-4236-6 649.0642.302 6 m PVC cable	MAK-4236-BCD-6 649.0642.319 6 m PVC cable	MAK-5236-6 649.0652.307 6 m PVC cable	MAK-5236-BCD-6 649.0652.328 6 m PVC cable	MAK-5336-6 649.0653.311 6 m PVC cable	MAK-5336-BCD-6 649.0653.324 6 m PVC cable
MAK-4236-9 649.0642.303 9 m PVC cable	MAK-4236-BCD-9 649.0642.320 9 m PVC cable	MAK-5236-9 649.0652.308 9 m PVC cable	MAK-5236-BCD-9 649.0652.329 9 m PVC cable	MAK-5336-9 649.0653.312 9 m PVC cable	MAK-5336-BCD-9 649.0653.325 9 m PVC cable
MAK-4236-STK 649.0642.305 4-pin connector	MAK-4236-BCD-M8 649.0642.321 4-pin connector	MAK-5236-STK 649.0652.309 4-pin connector	MAK-5236-BCD-M8 649.0652.322 4-pin connector	MAK-5336-STK 649.0653.313 4-pin connector	MAK-5336-BCD-M12 649.0653.326 4-pin connector

Actuator and Safety Controller Sold Separately

-5 °C/+70 °C	-5 °C/+70 °C	-5 °C/+70 °C	-5 °C/+70 °C	-5 °C/+70 °C	-5 °C/+70 °C
+23 °F/+158 °F	+23 °F/+158 °F	+23 °F/+158 °F	+23 °F/+158 °F	+23 °F/+158 °F	+23 °F/+158 °F
IP67	IP67	IP67	IP67	IP67	IP67
PA 6.6	PA 6.6	PBT	PBT	PA 6.6	PA 6.6
4 mm	4 mm	3 mm	3 mm	3 mm	3 mm
14 mm	14 mm	14 mm	14 mm	14 mm	14 mm

Actuator					
TK-42-CD	TK-42-CD	TK-52-CD/2	TK-52-CD/2	TK-43-CD	TK-43-CD
640.2042.310	640.2042.310	640.2052.311	640.2052.311	640.2043.312	640.2043.312

Safety Controllers					
639.2701.306	639.2701.306	639.2701.306	639.2701.306	639.2701.306	639.2701.306
639.2702.307	639.2702.307	639.2702.307	639.2702.307	639.2702.307	639.2702.307



Drawing dimensions in mm