

**Safety in system:
Protection for man and machine**

DOOR INTERLOCK SYSTEM MODERN, INTUITIVE, INTERACTIVE

NEW



DOOR INTERLOCK SYSTEM

SYSTEM OVERVIEW

Control panel BDF40

Control panel with or without emergency stop

Control panel BDF20

Control panel with or without emergency stop

Connection cover

Safety switchgear

Solenoid interlock AZM40 or safety sensors RSS36 or RSS260

Connector cover

Door handle DHS-U1

Door handle with handle surface that can be illuminated in colour and push button caps, also with coloured illumination



1. Door handle



DHS-U1
Door handle

2. Switchgear



AZM40
Solenoid Interlock



RSS36
Safety sensor



RSS260
Safety sensor

3. Control panel



BDF20
Control panels with or without emergency stop



BDF40
Control panels with or without emergency stop

4. Accessories



ACCESSORIES
Emergency release, connector covers, lockout tag, emergency stop protective collars

DOOR HANDLE DHS-U1

NEW STANDARDS IN ERGONOMICS, FUNCTIONALITY AND DESIGN



DOOR HANDLE DHS-U1

- Machine status directly recognisable on the door handle
- Ergonomic door handle for left or right hinged safety guard
- Degree of protection IP66, IP67
(with operating element)
IP66, IP67, IP69
(without operating element)
- Can be combined with solenoid interlock AZM40 or safety sensor RSS260
- Different versions are available:
 - With door handle illumination, with illuminated push button
 - With door handle illumination, without illuminated push button
 - Without double handle illumination, with illuminated push button
 - Without electrical connection

The innovative DHS-U1 door handle combines the functions of a robust door handle with the signalling of various machine statuses via large-scale illumination of the handle. The RGB technology used makes it possible to illuminate the handle in seven different colours.

A push button is also available, which can be individually adapted to customer requirements using the coloured push button cover caps supplied. The push button can, for example, fulfil the tasks of a reset function or a request to open the safety guard.



HANDLE COLOURS

The coloured illumination of the door handle surface indicates the current status of the machine on the door handle itself.

The colours white, yellow, green, light blue, blue, violet and red can indicate up to seven different machine statuses.



BUTTON COLOURS

Button caps can be simply clipped onto the illuminated push buttons of the DHS-U1 to provide colour signalling.

This allows the illuminated push button to be adapted to individual requirements and even be used for acknowledgement of machine statuses.



UNILLUMINATED DOOR HANDLE

The DHS-U1 version without electrical connection complements the range. This allows for uniform machine design whilst also taking cost aspects into consideration. It is available for doors that do not require an additional safety switch or signalling.

TECHNICAL DATA

DOOR HANDLE DHS-U1



■ DHS-U1

Key features

- Machine status directly recognisable on the door handle
- Optimised for the AZM40 solenoid interlock and the RSS36 or RSS260 safety sensors
- Ergonomic door handle for left or right hinged safety guard

Technical features

Electrical characteristics	
Operating voltage	24 VDC
Operating current	< 150 mA
Operating current illuminated push button LED	30 mA
Mechanical data	
Housing material	
handle	Glass-fibre reinforced thermoplastic
cover	translucent PMMA
holder	Glass-fibre reinforced thermoplastic
Dimensions (W × H × D)	40 × 202 × 83 mm
Termination	Connecting cable with connector M12, 5-pole, 0.25 m Connecting cable with connector M12, 8-pole, 0.25 m Connecting cable, 5-core, 5 m Connecting cable, 8-core, 5 m
Mechanical lifetime	
illuminated push button / push button	1,000,000 operations
Contact configuration	
illuminated push button / push button	1 NO contact
Ambient conditions	
Ambient temperature	
with electrical connection and illuminated handle	–25 °C ... +45 °C
with electrical connection and unilluminated handle	–25 °C ... +65 °C
without electrical connection	–40 °C ... +75 °C
Degree of protection	
with operating element	IP66, IP67
without operating element	IP66, IP67, IP69
without electrical connection	IP00

PRODUCT SELECTION

DOOR HANDLE DHS-U1

DOOR HANDLE DHS-U1

DHS-U1 without electrical connection	Termination		Pre-wired cable		Door handle		with illuminated push button	without operating element	Type	Material number
	5-pole, 0.25 m	8-pole, 0.25 m	5-core, 5 m	8-core, 5 m	unilluminated	illuminated				
■					■			■	DHS-U1-BKWH	103053675
	■				■		■		DHS-U1-BKWH-LST5-0.25-LT	103053676
			■		■		■		DHS-U1-BKWH-L5-5.00-LT	103053688
	■					■		■	DHS-U1-BKWH-LST5-0.25-RGB	103053691
			■			■		■	DHS-U1-BKWH-L5-5.00-RGB	103053692
		■				■	■		DHS-U1-BKWH-LST8-0.25-RGB-LT	103053677
				■		■	■		DHS-U1-BKWH-L8-5.00-RGB-LT	103053689

ACCESSORIES

Description	Type	Material number
Actuator insert (without integrated actuator)	ACC-DHS-U1-INS	103055437
Actuator insert (incl. RST actuator)	ACC-DHS-U1-INS-RST-U-2	103055438
Push button caps, one of each colour: ▪ for illuminated push buttons ▪ for push buttons	BDF40-DHS-PBC-LT BDF40-DHS-PBC-DT	103051229 103051694
Push button caps, five of each: ▪ black ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-DT-BK BDF40-DHS-PBC-DT-BU BDF40-DHS-PBC-DT-GN BDF40-DHS-PBC-DT-RD BDF40-DHS-PBC-DT-WH BDF40-DHS-PBC-DT-YE	103052432 103052430 103052429 103052427 103052431 103052428
Illuminated push button caps, five of each: ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-LT-BU BDF40-DHS-PBC-LT-GN BDF40-DHS-PBC-LT-RD BDF40-DHS-PBC-LT-WH BDF40-DHS-PBC-LT-YE	103052436 103052435 103052433 103052437 103052434

SOLENOID INTERLOCK AZM40

NO COMPROMISE ON SAFETY, INTUITIVE OPERATION



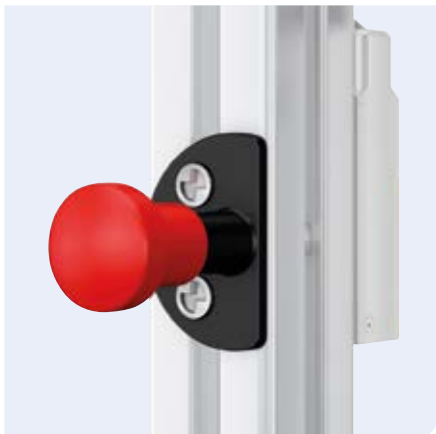
SOLENOID INTERLOCK AZM40

- High holding force
 $F_{zh} = 2,000 \text{ N}$, $F_{max} = 2,600 \text{ N}$
- Latching force 40 N
- Bistable working principle
- High protection against tampering through RFID technology
- Variant with emergency exit
- Suitable for applications up to Cat. 4 / PL e / SIL 3
- Degree of protection IP66, IP67, IP69

The combination of AZM40 solenoid interlock and DHS-U1 door handle unites appealing design with reliable functionality.

The AZM40 has a bistable interlock principle. This means that, in the event of a power failure, the interlock maintains its last locking status. The safety door thus remains safely locked in the event of a power failure, preventing access to hazardous areas. The DHS-U1 door handle offers comfortable and intuitive machine operation directly on the safety door itself. The ergonomically shaped handle enables effortless opening and closing.

The illuminated handle surface provides immediate indication of whether the machine is in operation or whether it is safe to open the safety door. The integrated control button allows operators to influence the status of the machine at the safety door itself, helping to save time and ensure efficient operation. Additional functions, such as emergency release, help to boost flexibility and safety.



EMERGENCY EXIT

An impact button is available as an optional accessory for installation inside the hazardous area. Pressing the push button will allow anyone who has inadvertently been locked inside the hazardous area to leave by releasing the interlock.



LOCKOUT TAG

For larger, accessible machines and systems, service staff can attach a lock to the lockout tag when entering the hazardous area. In this way, the guard door cannot be closed and an unintentional machine start-up is prevented.

- Attachment of up to six padlocks possible
- Practical retaining strap with securing chain



TAMPER PROTECTION

The anti-tampering cover conceals the connector of the AZM40 to protect it from unauthorised tampering, whilst also ensuring a harmonious and consistent design.

TECHNICAL DATA

SOLENOID INTERLOCK AZM40



■ AZM40

Key features

- Metal / thermoplastic enclosure
- RFID-technology for needs-based protection against tampering
- Individual coding possible
- Holding force 2,000 N
- Actuator can approach interlock continuously within a 180 degree angle

Technical features

Holding force F_{Zh}/F_{max}	2,000 N / 2,600 N
Operating voltage	24 VDC
Operating current	0.6 A (without load)
Max. switching capacity U/I	24 VDC / 0.25 A
Mechanical data	
Dimensions (W × H × D)	119.5 × 40 × 20 mm
Ambient conditions	
Ambient temperature	-20 °C ... +55 °C
Degree of protection	IP66, IP67, IP69

Safety classification of the interlocking function

Standards	EN ISO 13849-1, IEC 61508
PL/SIL	e/3
Control category	4
PFH	$1.1 \times 10^{-9}/h$
Certificates	TÜV, cULus

PRODUCT SELECTION

SOLENOID INTERLOCK AZM40

SOLENOID INTERLOCK AZM40

Guard locking monitoring	Actuator monitoring	Standard coding	Individual coding, can be taught once -I1	Individual coding, re-teaching enabled -I2	Enclosure with countersunk taper for countersunk bolts	Enclosure with flat mounting surface for cylinder-head screws	Type	Material number
■		■			■		AZM40Z-ST-1P2P	103034187
■			■		■		AZM40Z-I1-ST-1P2P	103034188
■				■	■		AZM40Z-I2-ST-1P2P	103034189
■		■				■	AZM40Z-ST-1P2P-PH	103037333
■			■			■	AZM40Z-I1-ST-1P2P-PH	103037334
■				■		■	AZM40Z-I2-ST-1P2P-PH	103037335
	■	■			■		AZM40B-ST-1P2P	103034193
	■		■		■		AZM40B-I1-ST-1P2P	103034194
	■			■	■		AZM40B-I2-ST-1P2P	103034195
	■	■				■	AZM40B-ST-1P2P-PH	103037330
	■		■			■	AZM40B-I1-ST-1P2P-PH	103037331
	■			■		■	AZM40B-I2-ST-1P2P-PH	103037332

ACTUATOR

Enclosure with countersunk taper for countersunk bolts	Enclosure with flat mounting surface for cylinder-head screws	Spring force	Type	Material number
■		50 N	AZM40-B1	103034199
	■	50 N	AZM40-B1-PH	103037328
■		14 N	AZM40-B1-3121	103048327
	■	14 N	AZM40-B1-PH-3121	On request

ACCESSORIES

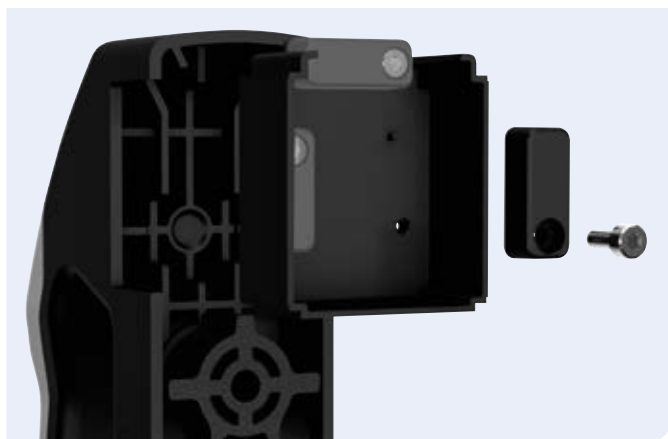
Description	Type	Material number
Emergency exit with push button <ul style="list-style-type: none"> for 40 mm profiles for profiles up to 170 mm 	ACC-AZM40-PT-T-40MM ACC-AZM40-PT-T-170MM	103054271 103054273
Lockout tag	SZ40	103053182
Tamper-proofing cover <ul style="list-style-type: none"> Hinged on the left Hinged on the right 	MS-AZM40-L MS-AZM40-R	133056997 133056998

SAFETY SENSORS RSS36 AND RSS260

ADDITIONAL INTERFACES AND FUNCTIONS

SAFETY SENSOR RSS36

- RFID-based, non-contact safety sensors for reliable door and flap monitoring
- Suitable for applications up to category 4 / PL e (EN ISO 13849-1) and SIL 3 (IEC 62061)
- Degree of protection IP65, IP67, IP69
- Slotted holes in the sensor enclosure enable easy offset compensation during mounting



The actuator is bolted on according to the installation position in the actuator insert.

In addition to the ability to operate the DHS-U1 door handle with the AZM40 solenoid interlock, there is also the option to use the door handle with the RSS260 or RSS36 safety sensors.

This might be necessary in situations in which no solenoid interlock is required or where other interfaces, such as the serial diagnosis function (SD) or AS-Interface Safety at Work (AS-i) is required.

With use of RFID technology, the safety sensors offer three different coding variants, thereby enabling optional adaptation to the tamper-proofing requirements that apply. The high repeat accuracy of the switching points ensures reliable functionality. In addition, the yellow LED flashes to indicate when the actuator is in the hysteresis range, warning the user in good time of potential problems such as a safety door misalignment.



SAFETY SENSOR RSS260

- RFID-based, non-contact safety sensors for reliable door and flap monitoring
- Suitable for applications up to category 4 / PL e (EN ISO 13849-1) and SIL 3 (IEC 62061)
- Degree of protection IP65, IP67
- Very compact design, ideal for use in tight installation situations



The RSS260 safety sensor can be mounted on the left, right or even above the door handle, depending on the requisite mounting position.

Both safety sensors can also perform the tasks of a safety relay module in the F0 and F1 variants. This means that the monitoring of the safety door as well as the contactors directly controlled by the sensor outputs is carried out by the integrated logic in the sensor, so that the use of a separate evaluation unit is not necessary.

With the F0 variant, the machine restarts automatically as soon as all safety doors are closed. However, an additional "enable button" – without detection of the



trailing edge – can be switched into the feedback circuit (EDM - External Device Monitoring).

For machines where the use of an emergency stop button is mandatory, safety sensors with the additional Q function are suitable. In this way, emergency stop switching elements integrated into a series circuit can be monitored by the last sensor in the chain. This eliminates the need to set up a separate safety circuit for the emergency stop buttons.

TECHNICAL DATA

SAFETY SENSORS RSS36 AND RSS260



■ RSS36



■ RSS260

Key features

- | | |
|---|---|
| <ul style="list-style-type: none"> ▪ Degree of protection up to IP69 ▪ RFID-technology for needs-based protection against tampering ▪ Individual coding possible ▪ Misaligned actuation possible ▪ Optionally with EDM and emergency stop monitoring | <ul style="list-style-type: none"> ▪ Extremely compact design ▪ RFID-technology for needs-based protection against tampering ▪ Individual coding possible ▪ Optionally with EDM and emergency stop monitoring |
|---|---|

Other versions are available

AS interface



Technical features

Operating voltage	24 VDC (PELV)	24 VDC (PELV)
Operating current	< 0.1 A without load	< 0.1 A (without load)
Max. switching capacity U/I	24 VDC / 250 mA	24 VDC / 250 mA
Mechanical data		
Individual coding possible	■	■
Serial diagnostics	■	■
Termination	Connector plug	Connector plug, Cable with connector
Cable section	–	0.14 mm ²
Dimensions (B × T × H)	106 x 25 x 22.6 mm	47.5 × 18 × 29.5 mm
LED switching conditions display	■	■
Ambient conditions		
Ambient temperature	–25 °C ... +70 °C	–28 °C ... max. +65 °C
Degree of protection	IP65, IP67, IP69	IP65, IP67

Safety classification

Standards	EN ISO 13849-1, IEC 61508	EN ISO 13849-1, IEC 61508
PL/SIL ¹⁾	e/3	e/3
Control category ¹⁾	4	4
PFH	2.7 x 10 ⁻¹⁰ /h	6.8 x 10 ⁻¹⁰ /h
Certificates	TÜV, cULus	TÜV, cULus

¹⁾ Also with series-wiring

PRODUCT SELECTION

SAFETY SENSORS RSS36 AND RSS260

SAFETY SENSORS RSS36 AND RSS260

Range	Safety outputs	Diagnostic	Termination	Standard coding	Individual coding, can be taught once -I1	Individual coding, re-teaching enabled -I2	Type	Material number
RSS36	2 p-type, short-circuit proof safety outputs	Conventional	Connector plug	■			RSS36-D-ST	101213954
					■		RSS36-I1-D-R-ST	101216957
					■		RSS36-I1-D-ST	101216958
						■	RSS36-I2-D-R-ST	101214773
						■	RSS36-I2-D-ST	101216956
		Serial		■			RSS36-SD-ST	101214772
RSS260	2 p-type, short-circuit proof safety outputs	Conventional	Connector plug	■			RSS260-D-ST	103003602
					■		RSS260-I1-D-ST	103003606
						■	RSS260-I2-D-ST	103003607
		Serial		■			RSS260-SD-ST	103003605
		Conventional	Cable with connector			■	RSS260-I2-D-LSTM8-8-0,1M	103013301
						■	RSS260-I2-D-LSTM12-8-0,25M	103014732

ACTUATOR INSERT

Description	Type	Material number
Actuator insert incl. RST-U-2 actuator and fixing screw	ACC-DHS-U1-INS-RST-U-2	103055438

CONTROL PANELS BDF20/BDF40

INTUITIVE CONTROL, ELEGANT DESIGN



CONTROL PANELS BDF20/BDF40

- Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system
- Flexibility thanks to mountable push button cover caps in 12 colours
- Generous open spaces for easy labelling
- Quick and fail-safe installation thanks to M12 connector
- Tamper protection with cover caps for the door system

The BDF20 and BDF40 control panels are characterised by their modern and slim design. They are available in two versions, with or without an emergency stop function. Freely configurable coloured button caps for illuminated push buttons or push buttons offer maximum flexibility.

Alternatively, they can also be installed as a stand-alone control panel. The M12 connector allows quick and fail-safe installation.



EMERGENCY STOP PROTECTIVE COLLAR

A protective collar is also available as an option for versions with emergency stop function, which prevents accidental activation.

With easy assembly, the collar can also be retrofitted to the emergency stop.



BUTTON COVER CAPS

The colour of illuminated push buttons and other push buttons on the BDF20/BDF40 can be changed by clipping on the button caps included in the delivery, allowing the control panel to be adapted to suit individual requirements.

Kits of five translucent caps each of blue, green, red, white or yellow are also available for the illuminated push buttons.

Kits containing five caps each of blue, green, red, white, yellow or black are also available for the push buttons.



TAMPER-PROTECTING AND CONNECTION COVER

When the BDF20/BDF40 is used as a stand-alone control panel, the optional tamper protection cover offers additional protection. It conceals the connector of the BDF20/BDF40, thus preventing unauthorised tampering.

When the control panel is used in conjunction with the AZM40 solenoid interlock, the optional connection cover can be used instead. This provides protection from tampering whilst also ensuring a harmonious appearance.

TECHNICAL DATA

CONTROL PANEL BDF20



■ BDF20



■ BDF20-NH

Key features

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Up to two buttons ▪ Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system ▪ Flexibility thanks to push button cover caps in 12 colours ▪ Generous open spaces for easy labelling ▪ Quick and error-free installation thanks to M12 connector | <ul style="list-style-type: none"> ▪ With emergency stop and push button ▪ Can be optionally retrofitted with emergency stop protective collars ▪ Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system ▪ Flexibility thanks to push button cover caps in 12 colours ▪ Generous open spaces for easy labelling ▪ Quick and error-free installation thanks to M12 connector |
|--|--|

Technical features

Electrical characteristics		
Operating voltage	24 VDC	24 VDC
Operating current	100 mA	100 mA
Power consumption LED	10 mA	10 mA
Mechanical data		
Housing material	Glass-fibre reinforced thermoplastic, self-extinguishing	Glass-fibre reinforced thermoplastic, self-extinguishing
Dimensions (W × H × D)	40 × 133 × 25 mm	40 × 133 × 44 mm
Termination	Connector plug M12, 8-pole	Connector plug M12, 8-pole
Mechanical lifetime		
emergency stop	–	50,000 operations
illuminated push button / push button	1,000,000 operations	1,000,000 operations
Ambient conditions		
Ambient temperature	–25 °C ... +65 °C	–25 °C ... +65 °C
Degree of protection	IP65	IP65

Safety classification emergency stop

Standards	–	EN ISO 13849-1
B _{10D} NC contact	–	100,000
Certificates	cULus	cULus

PRODUCT SELECTION

CONTROL PANEL BDF20

CONTROL PANEL BDF20

Emergency stop	Illuminated push button / push button		Indicator light / blanking plug		Type	Material number
Position 1	Position 1	Position 2	Position 1	Position 2		
■		■			BDF20-ST-10-NH-LT	103056631
■				■	BDF20-ST-10-NH-LM	103056632
	■	■			BDF20-ST-10-LT-LT	103056633
	■			■	BDF20-ST-10-LT-LM	103056634
			■	■	BDF20-ST-10-LM-LM	103056637
		■	■		BDF20-ST-10-LM-LT	103056638

ACCESSORIES

Description	Type	Material number
Emergency stop protective collar	MS-BDF40-NHK	103057000
Tamper-proofing cover	MS-BDF40	133056999
Connection cover AZM40 / BDF20 / BDF40 ▪ AZM40 hinged on the left ▪ AZM40 hinged on the right	MS-AZM40-BDF40-L MS-AZM40-BDF40-R	133057001 133057002
Push button caps, one of each colour: ▪ for illuminated push buttons ▪ for push buttons	BDF40-DHS-PBC-LT BDF40-DHS-PBC-DT	103051229 103051694
Push button caps, five of each: ▪ black ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-DT-BK BDF40-DHS-PBC-DT-BU BDF40-DHS-PBC-DT-GN BDF40-DHS-PBC-DT-RD BDF40-DHS-PBC-DT-WH BDF40-DHS-PBC-DT-YE	103052432 103052430 103052429 103052427 103052431 103052428
Illuminated push button caps, five of each: ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-LT-BU BDF40-DHS-PBC-LT-GN BDF40-DHS-PBC-LT-RD BDF40-DHS-PBC-LT-WH BDF40-DHS-PBC-LT-YE	103052436 103052435 103052433 103052437 103052434

TECHNICAL DATA

CONTROL PANEL BDF40



■ BDF40



■ BDF40-NH

Key features

- Up to four buttons
- Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system
- Flexibility thanks to push button cover caps in 12 colours
- Generous open spaces for easy labelling
- Quick and error-free installation thanks to M12 connector

- With emergency stop and up to three buttons
- Can be optionally retrofitted with emergency stop protective collars
- Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system
- Flexibility thanks to push button cover caps in 12 colours
- Generous open spaces for easy labelling
- Quick and error-free installation thanks to M12 connector

Technical features

Electrical characteristics		
Operating voltage	24 VDC	24 VDC
Operating current	100 mA	100 mA
Power consumption LED	10 mA	10 mA
Mechanical data		
Housing material	Glass-fibre reinforced thermoplastic, self-extinguishing	Glass-fibre reinforced thermoplastic, self-extinguishing
Dimensions (W × H × D)	40 × 217 × 25 mm	40 × 217 × 44 mm
Termination	Connector plug M12, 12-pole	Connector plug M12, 12-pole
Mechanical lifetime		
emergency stop	–	50,000 operations
illuminated push button / push button	1,000,000 operations	1,000,000 operations
Ambient conditions		
Ambient temperature	–25 °C ... +65 °C	–25 °C ... +65 °C
Degree of protection	IP65	IP65

Safety classification emergency stop

Standards	–	EN ISO 13849-1
B ₁₀₀ NC contact	–	100,000
Certificates	cULus	cULus

PRODUCT SELECTION

CONTROL PANEL BDF40

CONTROL PANEL BDF40

Emergency stop	Illuminated push button / push button				Indicator light / blanking plug				Type	Material number
	Position 1	Position 2	Position 3	Position 4	Position 1	Position 2	Position 3	Position 4		
■		■	■	■					BDF40-ST-10-NH-LT-LT-LT	103052203
	■	■	■	■					BDF40-ST-10-LT-LT-LT-LT	103052204
		■	■	■	■				BDF40-ST-10-LM-LT-LT-LT	on request
	■	■	■					■	BDF40-ST-10-LT-LT-LT-LM	on request
■			■	■		■			BDF40-ST-10-NH-LM-LT-LT	on request
■		■	■					■	BDF40-ST-10-NH-LT-LT-LM	on request
		■	■		■			■	BDF40-ST-10-LM-LT-LT-LM	103060714

ACCESSORIES

Description	Type	Material number
Emergency stop protective collar	MS-BDF40-NHK	103057000
Tamper-proofing cover	MS-BDF40	133056999
Connection cover AZM40 / BDF20 / BDF40 ▪ AZM40 hinged on the left ▪ AZM40 hinged on the right	MS-AZM40-BDF40-L MS-AZM40-BDF40-R	133057001 133057002
Push button caps, one of each colour: ▪ for illuminated push buttons ▪ for push buttons	BDF40-DHS-PBC-LT BDF40-DHS-PBC-DT	103051229 103051694
Push button caps, five of each: ▪ black ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-DT-BK BDF40-DHS-PBC-DT-BU BDF40-DHS-PBC-DT-GN BDF40-DHS-PBC-DT-RD BDF40-DHS-PBC-DT-WH BDF40-DHS-PBC-DT-YE	103052432 103052430 103052429 103052427 103052431 103052428
Illuminated push button caps, five of each: ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-LT-BU BDF40-DHS-PBC-LT-GN BDF40-DHS-PBC-LT-RD BDF40-DHS-PBC-LT-WH BDF40-DHS-PBC-LT-YE	103052436 103052435 103052433 103052437 103052434

TECHNICAL DATA

CONTROL PANEL BDF40-SD/-FB



■ BDF40-SD/-FB



■ BDF40-SD/-FB NH

Key features

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Integrated SD/FB interface ▪ Up to four buttons ▪ Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system ▪ Flexibility thanks to push button cover caps in 12 colours ▪ Generous open spaces for easy labelling | <ul style="list-style-type: none"> ▪ Integrated SD/FB interface ▪ With emergency stop and up to three buttons ▪ Can be optionally retrofitted with emergency stop protective collars ▪ Slimline design to match the AZM40 solenoid interlock and the DHS-U1 door handle system ▪ Flexibility thanks to push button cover caps in 12 colours ▪ Generous open spaces for easy labelling |
|--|---|

Technical features

Electrical characteristics		
Operating voltage	24 VDC (PELV)	24 VDC (PELV)
Operating current	< 0.1 A (without load)	< 0.1 A (without load)
Design of the emergency stop switching elements	–	short-circuit proof, p-type
Max. switching capacity U/I emergency stop	–	24 VDC / 250 mA
Mechanical data		
Housing material	Glass-fibre reinforced thermoplastic, self-extinguishing	Glass-fibre reinforced thermoplastic, self-extinguishing
Dimensions (W × H × D)	40 × 217 × 25 mm	40 × 217 × 44 mm
Termination	Connector plug M12, 8-pole	Connector plug M12, 8-pole
Mechanical lifetime		
emergency stop	–	50,000 operations
illuminated push button / push button	1,000,000 operations	1,000,000 operations
Ambient conditions		
Ambient temperature	–25 °C ... +65 °C	–25 °C ... +65 °C
Degree of protection	IP65	IP65

Safety classification emergency stop

Standards	EN ISO 13849-1 EN IEC 61508	EN ISO 13849-1 EN IEC 61508
PL/SIL	e/3	e/3
Control category	4	4
PFH-value	$2.89 \times 10^{-10}/h$	$2.89 \times 10^{-10}/h$
Note (PFH value)	up to max. 5,000 switching cycles/year	up to max. 5,000 switching cycles/year
Usage duration	20 years	20 years
Certificates	cULus	cULus

PRODUCT SELECTION

CONTROL PANEL BDF40-SD/-FB

CONTROL PANEL BDF40-SD/-FB

Emergency stop	Emergency stop with illumination	Illuminated push button / push button				Indicator light / blanking plug				Type	Material number
Position 1	Position 1	Position 1	Position 2	Position 3	Position 4	Position 1	Position 2	Position 3	Position 4		
	■		■	■	■					BDF40-SD-10-NHL-LT-LT-LT	103060219
■			■	■	■					BDF40-SD-10-NH-LT-LT-LT	103060220
	■		■	■	■				■	BDF40-SD-10-NHL-LT-LT-LM	on request
		■	■	■	■					BDF40-SD-10-LT-LT-LT-LT	103060221
			■	■		■			■	BDF40-SD-10-LM-LT-LT-LM	on request
	■		■	■	■					BDF40-FB-10-NHL-LT-LT-LT	103060222
■			■	■	■					BDF40-FB-10-NH-LT-LT-LT	103060223
	■		■	■					■	BDF40-FB-10-NHL-LT-LT-LM	on request
		■	■	■	■					BDF40-FB-10-LT-LT-LT-LT	103060224
			■	■		■			■	BDF40-FB-10-LM-LT-LT-LM	on request

ACCESSORIES

Description	Type	Material number
Emergency stop protective collar	MS-BDF40-NHK	103057000
Tamper-proofing cover	MS-BDF40	133056999
Connection cover AZM40 / BDF20 / BDF40 ▪ AZM40 hinged on the left ▪ AZM40 hinged on the right	MS-AZM40-BDF40-L MS-AZM40-BDF40-R	133057001 133057002
Push button caps, one of each colour: ▪ for illuminated push buttons ▪ for push buttons	BDF40-DHS-PBC-LT BDF40-DHS-PBC-DT	103051229 103051694
Push button caps, five of each: ▪ black ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-DT-BK BDF40-DHS-PBC-DT-BU BDF40-DHS-PBC-DT-GN BDF40-DHS-PBC-DT-RD BDF40-DHS-PBC-DT-WH BDF40-DHS-PBC-DT-YE	103052432 103052430 103052429 103052427 103052431 103052428
Illuminated push button caps, five of each: ▪ blue ▪ green ▪ red ▪ white ▪ yellow	BDF40-DHS-PBC-LT-BU BDF40-DHS-PBC-LT-GN BDF40-DHS-PBC-LT-RD BDF40-DHS-PBC-LT-WH BDF40-DHS-PBC-LT-YE	103052436 103052435 103052433 103052437 103052434

THE SCHMERSAL GROUP

PROTECTION FOR MAN AND MACHINE

In the demanding field of machine safety, the owner-managed Schmersal Group is one of the international market leaders. The company, which was founded in 1945, has a workforce of about 2,000 people and seven manufacturing sites on three continents along with its own companies and sales partners in more than 60 nations.

Customers of the Schmersal Group include “Global Players” in mechanical engineering and plant manufacturing and operators of machinery. They benefit from the company’s extensive expertise as a provider of systems and solutions for machine safety. In addition, Schmersal specialises in various areas including intralogistics, foodstuff production, the packaging industry, machine tool industry, lift switchgear, heavy industry and the automotive industry.

A major contribution to the systems and solutions offered by the Schmersal Group is made by tec.nicum with its comprehensive range of services: Certified Functional Safety Engineers advise machinery manufacturers and machinery operators in all aspects relating to machinery and occupational safety – and do so with product and manufacturer neutrality. Furthermore, they design and realise complex solutions for safety around the world in close collaboration with the clients.



SAFETY PRODUCTS

- Safety switches and sensors, solenoid interlocks
- Safety controllers and safety relay modules, safety bus systems
- Optoelectronic and tactile safety devices
- Automation technology: position switches, proximity switches

SAFETY SYSTEMS

- Complete solutions for safeguarding hazard areas
- Individual parametrisation and programming of safety controllers
- Tailor-made safety technology – be it for individual machines or a complex production line
- Industry-specific safety solutions

SAFETY SERVICES

- tec.nicum academy – Seminars and training
- tec.nicum consulting – Consultancy services
- tec.nicum engineering – Design and technical planning
- tec.nicum integration – Execution and installation
- tec.nicum digitalisation – Software solutions and new digital technologies
- tec.nicum outsourcing – Complete solutions



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