



EN Operating instructions.pages 1 to 6
Original

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1. About this document

1.1 Function

These operating instructions provide all the information you need for the mounting, set-up and safe operation and disassembly of the door handle system. The operating instructions must be available in a legible condition and a complete version in the vicinity of the device.

1.2 Target group: authorised qualified personnel

All operations described in this operating instructions manual must be carried out by trained specialist personnel, authorised by the plant operator only.

Please make sure that you have read and understood these operating instructions and that you know all applicable legislations regarding occupational safety and accident prevention prior to installation and putting the component into operation.

The machine builder must carefully select the harmonised standards to be complied with as well as other technical specifications for the selection, mounting and integration of the components.

1.3 Explanation of the symbols used



Information, hint, note:

This symbol indicates useful additional information.



Caution: Failure to comply with this warning notice could lead to failures or malfunctions.

Warning: Failure to comply with this warning notice could lead to physical injury and/or damage to the machine.

1.4 General safety instructions

The Schmersal range of products is not intended for private consumers.

The user must observe the safety instructions in this operating instructions manual, the country specific installation standards as well as all prevailing safety regulations and accident prevention rules.



Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: products.schmersal.com.

The information contained in this operating instructions manual is provided without liability and is subject to technical modifications.

There are no residual risks, provided that the safety instructions as well as the instructions regarding mounting, commissioning, operation and maintenance are observed.

1.5 Exclusion of liability

We shall accept no liability for damages or malfunctions resulting from defective mounting or failure to comply with this operating instructions manual. We shall accept no liability for damages or malfunctions resulting from defective mounting or failure to comply with this operating instructions manual.

For safety reasons, invasive work on the device as well as arbitrary repairs, conversions and modifications to the device are strictly forbidden, the manufacturer shall accept no liability for damages resulting from such invasive work, arbitrary repairs, conversions and/or modifications to the device.

2. Product description

2.1 Ordering code

This operating instructions manual applies to the following types:

DHS-U1-BKWH-①-②-③

No.	Option	Description
①	LST5-0.25	Without electrical connection Connecting cable with connector M12, 5-pole, 0.25 m
	LST8-0.25	Connecting cable with connector M12, 8-pole, 0.25 m
	L5-5.00	Connecting cable, 5-core, 5 m
	L8-5.00	Connecting cable, 8-core, 5 m
②	RGB	Door handle unilluminated Door handle illuminated
	LT	No operating element Illuminated pushbutton

2.2 Optional accessory (not included in delivery)

AZM40-B1 (103034199)	Actuator for use of the DHS-U1 in conjunction with the AZM40...(-PH) solenoid interlock.
AZM40-B1-PH (103037328)	
ACC-DHS-U1-INS-RST-U-2 (103055438)	Actuator insert incl. RST-U-2 actuator and attachment screw for use of the DHS-U1 in conjunction with safety sensor RSS260.
ACC-DHS-U1-INS (103055437)	Actuator insert (without function) for use of the DHS-U1 without corresponding safety switchgear device

2.3 Special versions

For special versions, which are not listed in the ordering code below 2.1, these specifications apply accordingly, provided that they correspond to the standard version.

2.4 Purpose and use

The DHS-U1 is suitable for use with an AZM40 solenoid interlock, with an RSS260 safety sensor, or without integrated actuator as a universal door handle system.

2.5 Technical data

Standards:	EN 60947-5-1
Material:	
- Door handle:	glass-fibre reinforced thermoplastic
- Cover:	translucent PMMA
- Holder:	glass-fibre reinforced thermoplastic

Mechanical data

Connection:	connecting cable with M12 connector (A-coded) or connecting cable (PUR)
Cable section:	5 or 8 x 1.3 mm ²
Cable bending radius:	
- With fixed routing:	≥ 27.5 mm
- With free movement:	≥ 55 mm
Tightening torque:	
- Fixing screws:	3.5 Nm (M6)
- Door handle screws:	2.5 Nm (Torx Plus T20)

Ambient conditions

Ambient temperature:	
- version with illuminated door handle:	-25 °C ... +45 °C
- version without illuminated door handle:	-25 °C ... +65 °C
- version without electrical connection:	-40 °C ... +75 °C
Storage and transport temperature:	-40 °C ... +85 °C
Relative humidity:	max. 93 %, non condensing, non icing
Degree of protection:	IP66, IP67 (with operating element) IP66, IP67, IP69 (without operating element)
Installation altitude above sea level:	max. 3,000 m
Protection class:	III
Resistance to shock:	30 g / 11 ms (to EN 60068-2-27)
Resistance to vibration:	10 ... 55 Hz, amplitude 1 mm (to EN 60068-2-6)
Insulation values to EN 60664-1:	
- Rated insulation voltage U_i :	32 VDC
- Rated impulse withstand voltage U_{imp} :	0.8 kV
- Over-voltage category:	III
- Degree of pollution:	3

Electrical data

Utilisation category:	DC-12, DC-13
Operating voltage U_B :	24 VDC -15% / +10%
Operating current I_B :	< 150 mA
Required rated short-circuit current:	100 A
External cable and device fuse rating:	2 A gG

Electrical data – RGB-LEDs

Switching thresholds:	-3 V ... 5 V (Low), 11 V ... 30 V (High)
Current consumption per input:	≤ 5 mA / 24 V

Technical data of the pushbutton

Mechanical lifetime:	1,000,000 operations
Actuating force (at stroke end):	max. 10 N
Switch travel:	1 mm
Switching frequency:	1,000 /h
Bounce duration:	< 2 ms at 100 mm/s actuating speed
LED power consumption, pushbutton:	30 mA

3. Mounting

3.1 General mounting instructions



Please observe the relevant requirements of the standards EN ISO 12100, EN ISO 14119 and EN ISO 14120.



When using the DHS-U1 door handle system with solenoid interlock AZM40 or safety sensor RSS260, always observe the operating instructions of the devices and their actuators.

Any position is possible.

The system must not be used as an end stop.

Two holes for M6 screws (screws not included in delivery) must be provided for mounting of the DHS-U1. Tightening torque 3.5 Nm.



3.2 Mounting of the actuator / actuator insert

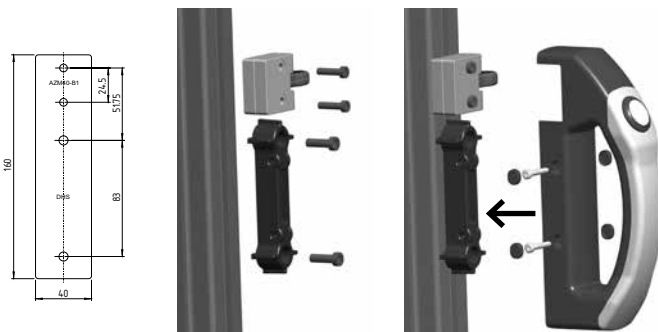
DHS-U1 with solenoid interlock AZM40

The AZM40-B1(-PH) actuator, available as an accessory, must be mounted at the designated position for use of the DHS-U1 in conjunction with an AZM40 solenoid interlock.

Actuator AZM40-B1 must be aligned and mounted in accordance with the drawing of the holder.

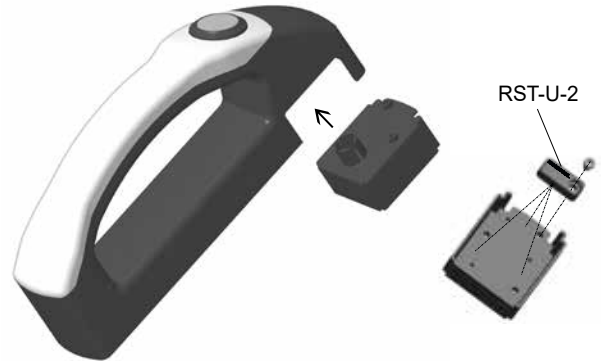
The mounting template (included in delivery) may be used for simplified mounting.

Mounting template



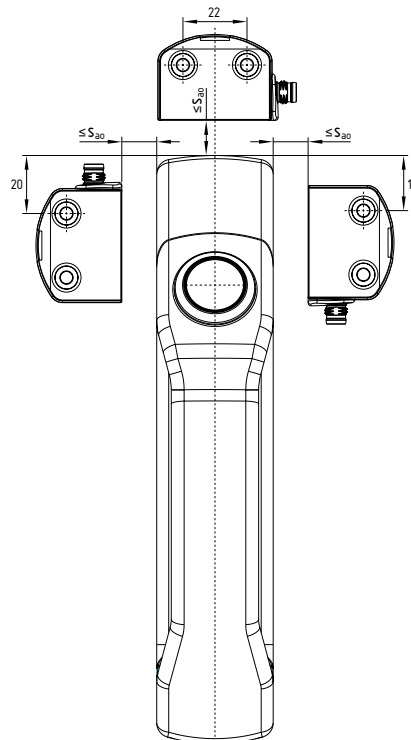
DHS-U1 with safety sensor RSS260

Actuator insert DHS-U1-INS-RST-U-2 (comprising actuator insert, RST-U-2 actuator and attachment screws), available as an accessory, must be used for use of the DHS-U1 with an RSS260 safety sensor. There is a lug and a hole at three possible positions on the inside of the insert to allow actuator RST-U-2 to be mounted. The RST-U-2 actuator must be mounted by the customer in the actuator insert, on the desired side, depending on the door hinge.



To ensure reliable detection of the RFID tag, only one actuator RST-U-2 may be mounted.

Installation positions DHS-U1 with RSS260



Information on the switching distances can be found in the ACC-DHS-U1-INS-RST-U-2 supplement to the operating instructions.

DHS-U1 without integrated actuator

When the DHS-U1 is used as a door handle without corresponding safety switchgear device, actuator insert DHS-U1-INS, available as an accessory, must also be used.



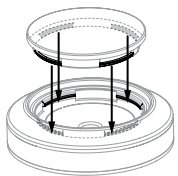
3.3 Mounting the pushbutton caps



The colour cover caps are only suitable for one-off installation. Disassembly of the caps could cause damages to the component. The caps must be mounted immediately after unpacking the door handle system, in order to avoid soiling of the inner pushbutton compartment by dirt particles / dust.

The colour cover caps (white, yellow, green, blue and red included in delivery) are fitted as follows:

1. Remove the colour cover caps from the supply kit
2. Position the colour cover caps and press down until you hear a "click" on engagement
3. Check the smooth actuation of the pushbutton caps



When checking the latter, the pushbutton must return autonomously from the actuated to the non-actuated state and the cap must be at the same height as the device edging.

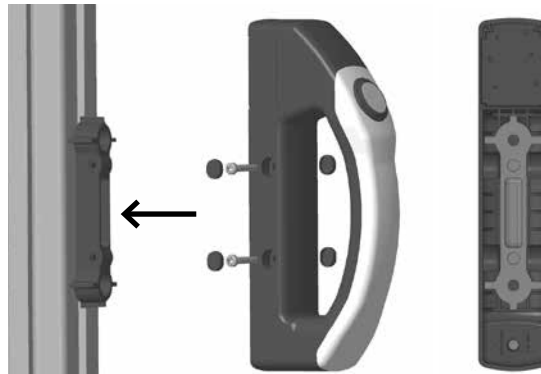
3.4 Mounting the door handle

When using the door handle with a safety sensor or without an integrated actuator, position the door handle and insert on the holder and secure to the holder at the side using the two supplied self-tapping screws. Depending on the installation situation, the self-tapping screws may be used from both sides. The sealing kit (included) can be used to cover the holes.

Two self-tapping screws (Torx Plus T20) are included in delivery for mounting of the door handle to the holder. Tightening torque 2.5 Nm.

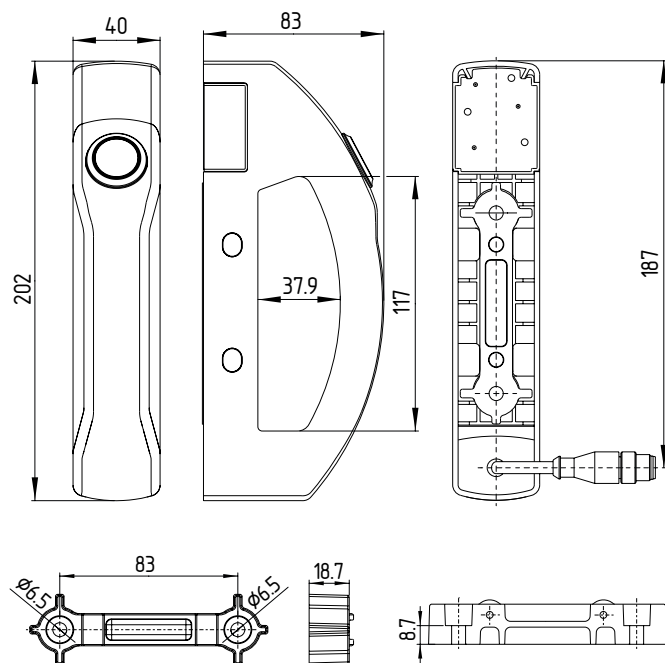
Attaching the sealing kit

- to seal the mounting holes
- as suitable tampering protection for the screw fixings



3.5 Dimensions

All measurements in mm.



4. Electrical connection

4.1 General information for electrical connection



The electrical connection may only be carried out by authorised personnel in a de-energised condition.

The required electrical cable and device fuse protection must be integrated in the installation.

4.2 Cable

When routing the cable, ensure that the holes (drilled by the customer) are free of burrs in order to prevent damage to the cable as it passes through.

The following minimum bending radii must be observed when routing the cable:

- with fixed routing (one-off bending): 27.5 mm
- with free routing (repeat bending) 55 mm

4.3 Door handle illumination

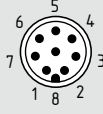
The system is equipped with RGB LEDs. With combined actuation of multiple base colours, the door handle can be illuminated in other colours in accordance with the following table.

Colour/LED inputs	Input red RGB LED	Input green RGB LED	Input blue RGB LED
Switched off	0	0	0
Red	1	0	0
Green	0	1	0
Blue	0	0	1
Yellow	1	1	0
Violet	1	0	1
Bright blue	0	1	1
White	1	1	1


0 = input off / 1 = input on

4.4 Connection example

Door handle system illuminated with operating element, connector 8-pole

Function	Pin assignment of the connector plug M12, 8-pole, A-coded	Colour code of the integrated cable
DHS-U1 illuminated with operating element		
24 VDC	1	WH
Input red RGB LED	2	BN
GND	3	GN
NO contact (illuminated pushbutton)	4	YE
Input green RGB LED	5	GY
Input blue RGB LED	6	PK
n.c.	7	BU
Input LED (in illuminated pushbutton)	8	RD

Door handle system illuminated without operating element or unilluminated with operating element, connector 5-pole

Function	Pin assignment of the connector plug M12, 5-pin, A-coded	Colour code of the integrated cable
DHS-U1 illuminated without operating element		
24 VDC	1	BN
Input red RGB LED	2	WH
GND	3	BU
Input green RGB LED	4	BK
Input blue RGB LED	5	RD / GY
DHS-U1 unilluminated with operating element		
24 VDC		
NO contact (illuminated pushbutton)		
GND		
Input LED (in illuminated pushbutton)		
n.c.		

5. Set-up and maintenance

5.1 Functional testing

The function of the component must be tested. The following conditions must be previously checked and met:

1. Correct fixing of the system.
2. The installation is executed according to the instructions.
3. The connection is executed correctly.
4. After inserting the pushbutton caps, check the correct seating and ease of actuation of the illuminated pushbutton.

5.2 Maintenance

In case of correct installation in accordance with the instructions described above, the component requires little maintenance. For use in extreme conditions, we recommend routine maintenance as follows:

1. Check the system for firm seating.
2. Remove particles of dust and soiling.
3. Check cable entry and connections.
4. Check the ease of actuation of the illuminated pushbutton.

6. Disassembly and disposal


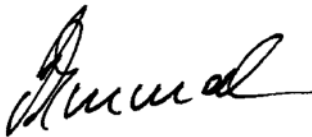
6.1 Disassembly

The door handle system must be disassembled in a de-energised condition only.

6.2 Disposal

The door handle system must be disposed of in an appropriate manner in accordance with the national regulations and legislation.

7. EU Declaration of conformity

EU Declaration of conformity		
Original	K.A. Schmersal GmbH & Co. KG Möddinghofe 30 42279 Wuppertal Germany Internet: www.schmersal.com	
We hereby certify that the hereafter described components both in their basic design and construction conform to the applicable European Directives.		
Name of the component:	DHS-U1	
Type:	See ordering code	
Description of the component:	Door handle system	
Relevant Directives:	EMC-Directive RoHS-Directive	2014/30/EU 2011/65/EU
Applied standards:	EN 60947-5-1:2017 + AC:2020	
Person authorised for the compilation of the technical documentation:	Oliver Wacker Möddinghofe 30 42279 Wuppertal	
Place and date of issue:	Wuppertal, May 21, 2024	
DHS-U1-A-EN		
	Authorised signature Philip Schmersal Managing Director	



The currently valid declaration of conformity can be downloaded from the internet at products.schmersal.com.

