

(1) EU-TYPE EXAMINATION CERTIFICATE



- (2) Equipment and Protective Systems intended for use in
Potentially Explosive Atmosphere - **Directive 2014/34/EU**
- (3) EU-Type Examination Certificate Number

TÜV 19 ATEX 8428

Issue: 02

- (4) Equipment: Belt Alignment Switch, Position Switch EX-I-BS655..., EX-BS655...,
EX-BS655-...-DS-2D, EX-BS655...-DN-2D
Pull-Wire Emergency Stop Switch EX-I-RS655..., EX-RS655...,
EX-RS655-...-DS-2D, EX-RS655...-DN-2D
- (5) Manufacturer: **Schmersal Industrial Switchgear (Shanghai) Co., Ltd.**
- (6) Address: **Cao Ying Road 3336, Qingpu,
201712 Shanghai, China**
- (7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.
- The examination and test results are recorded in the confidential report 557 / Ex 8428.02 / 19
- (9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:
- | | | |
|------------------------------------|-------------------------|-------------------------|
| EN IEC 60079-0:2018 | EN 60079 1:2014 | EN 60079-7:2015 |
| EN IEC 60079-7:2015/A1:2018 | EN 60079-11:2012 | EN 60079-31:2014 |
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.
- (12) The marking of the equipment shall include the following:



II 2 G Ex ia IIC T6 Gb, Ex db eb IIC T6 Gb

II 2 D Ex ia IIIC T85°C Db, Ex tb IIIC T85°C Db

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-03-02

Dipl.-Ing. Christian Mehrhoff



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This EU-Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the
TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax. + 49 (0) 221 806 114



(13)

Annex

(14)

EU Type Examination Certificate

TÜV 19 ATEX 8428

Issue: 02

(15)

Description of equipment

15.1 Equipment and type:

Belt Alignment Switch, Position Switch, Pull-Wire Emergency Stop Switch

Type designation

Type code Belt Alignment Switches, Position Switches EX-I-BS655...

EX-I-BS655	[1]	[2]-	[3]		
[1] Contact Versions					
Z22	Snap action, 2 NO contacts / 2 NC contacts				
T22	Slow action, 2 NO contacts / 2 NC contacts				
[2] Contact material					
(leer/blank)	Silver contacts				
A1	Gold-plated, 0,3µm				
A2	Gold-plated, 1,0µm				
A3	Gold-plated, 3,0µm				
[3] Special Versions					
(leer/blank)	Without special functions				
xxxx	Customer-specific setting of the switching points				

Type code Belt Alignment Switches, Position Switches EX-BS655..-DS-2D / EX-BS655..-DN-2D

EX-BS655-	[1]	[2]-	[3]-	[4]-	[5]
[1] Contact Versions					
Z22	Snap action, 2 NO contacts / 2 NC contacts				
T22	Slow action, 2 NO contacts / 2 NC contacts				
[2] Contact material					
(leer/blank)	Silver contacts				
A1	Gold-plated, 0,3µm				
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[3]	Dupline module	
	DS	Optionally with integrated DuplineSafe® input module
	DN	Optionally with integrated Dupline® input module
[4]	EX-Categories	
	2D	Zone 21 and 22
	Special Versions	
[5]	(leer/blank)	Without special functions
	xxxx	Customer-specific setting of the switching points

Type code Pull-Wire Emergency Stop Switches EX-I-RS 655...

EX-I-RS655	[1]	[2]			
[1]	Contact Versions				
	Z22	Snap action, 2 NO contacts / 2 NC contacts			
	T22	Slow action, 2 NO contacts / 2 NC contacts			
[2]	Contact material				
	(leer/blank)	Silver contacts			
	A1	Gold-plated, 0,3µm			
	A2	Gold-plated, 1,0µm			
	A3	Gold-plated, 3,0µm			

Type code Pull-Wire Emergency Stop Switches EX-RS655..-DS-2D

EX-RS655	[1]	[2]-	[3]-	[4]-	
[1]	Contact Versions				
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	A3	Gold-plated, 3,0µm			
[3]	Dupline module				
	DS	Optionally with integrated DuplineSafe® input module			
[4]	EX-Categories				
	2D	Zone 21 and Zone 22			

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[4] EX-Categories					
2D	Zone 21 and 22				
Special Versions					
[5] (leer/blank)	Without special functions				
xxxx	Customer-specific setting of the switching points				

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[3]	Special Versions				
	(leer/blank)	Without special functions			
	xxxx	Customer-specific setting of the switching points			

Type code Pull-Wire Emergency Stop Switches EX-I-RS 655...

EX-I-RS655		[1]	[2]		
[1]	Contact Versions				
	Z22	Snap action, 2 NO contacts / 2 NC contacts			
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Type code Pull-Wire Emergency Stop Switches EX-RS655..-DS-2D

EX-RS655		[1]	[2]-	[3]-	[4]-	
[1]	Contact Versions					
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	DS	Optionally with integrated DuplineSafe® input module				
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[4]	EX-Categories					
	2D	Zone 21 and Zone 22				

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15.2 Description

General product information

Belt Alignment Switches, Position Switches

The Belt Alignment Switches, Position Switches type EX-I-BS655 are used for detecting the position and monitoring moving belts in areas of Zone 1, Zone 2. The Belt Alignment Switches, Position Switches type EX-BS655..-DN-2D and EX-BS655..-DS-2D are used for detecting the position and monitoring moving belts in areas of Zone 21 and 22 they can be equipped with a DuplineSafe® input module. The Belt Alignment Switches, Position Switches detects the position of the belt by two switching position. The first switching position is early warning the second position is for cut off the belt. The switch consists of a metal enclosure inner mounted switching elements and variant types of mechanical actuators. The aspects of the mechanical explosion protection of the actuators are not part of this testing.

The Pull-Wire Emergency Stop Switches

The Pull-Wire Emergency Stop Switches type EX-I-RS655 are fitted to machines and plant components in areas of Zone 1, Zone 2.

The Pull-Wire Emergency Stop Switches type EX-RS655.-DS-2D are fitted to machines and plant components in areas of Zone 21 and 22 the can be equipped with DuplineSafe® input modul.

The Pull-Wire Emergency Stop Switches are used to give the stop order from any position along the machine or plant component. The switch consists of a metal enclosure, a reset button, a wire eye and gaskets.

Details of Change Issue02

For the various types of switch, the type of protection has been modified in some cases, the range of applications has been extended and a further type of protection has been added by the optional installation of a flameproof switching element inside the enclosure.

The assignment can be seen in the table below.

For type of protection Ex ib IIC T6 Gb changed to Ex ia IIC T6 Gb.

A new type of protection is added Ex ia IIIC T85°C Db. DEMKO 20 ATEX 2369U Rev. 0 and IECEx_ULBR_20.0004U_000

The type EX-BS 655 can be equippt with separately certified (eb, db) switching modules.

So a new type of protection is added Ex db eb IIC T6 Gb

Overview HDS types, Zones, ignition protection type

		EX-I-BS/RS655	EX-BS/RS655-2D	EX-BS/RS655
Zone	Zone 1 Gas	X		X
	Zone 21 Dust	X	X	X
Ignition protection type	Ex de, Gas			X
	Ex t, Dust	X	X	X
	Ex i, Gas (associated equipment required)	X		X
	Ex i, Dust (associated equipment required)	X		X
Construction	Terminal block	X	X	
Communication	Dupline		X	

Following types are now existing:

Type	Type of protection
EX-I-BS655-... and EX-I-RS655-...	Ex ia IIC T6 Gb Ex ia IIIC T85°C Db. Ex tb IIIC T85°C Db
EX-BS655-...-DS-2D EX-BS655...-DN-2D EX-RS655-...-DS-2D EX-RS655...-DN-2D	Ex tb IIIC T85°C Db
EX-BS 655	Ex ia IIC T6 Gb Ex ia IIIC T85°C Db Ex tb IIIC T85°C Db Ex db eb IIC T6 Gb

Technical Data

**Technical data for Belt Alignment Switches, Position Switches
type EX-I-BS655... in type of protection Ex ia IIC T6 Gb and Ex ia IIIC T85°C Db**

For connecting to one intrinsically safe circuit

Max. input voltage	U_i	60 V
Max. input current	I_i	100mA
Max. input power	P_i	6W
Max. inner capacity	C_i	negligible
Max. inner inductance	L_i	negligible

Ambient temperature range $-25^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

**Technical data for Belt Alignment Switches, Position Switches
type EX-I-BS655... in type of protection Ex tb IIIC T85°C Db**

Rated insulation voltage	U_i	300 V
Utilization category		AC-15: 230 V / 3 A DC-13: 24 V / 3 A
Rated surge voltage	U_{imp}	4 kV

Ambient temperature range $-25^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

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**Technical data for Belt Alignment Switches, Position Switches
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Utilization category		AC-15: 230 V / 3 A DC-13: 24 V / 3 A
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**Technical data for Pull-Wire Emergency Stop Switches
type EX-I-RS 655 in type of protection Ex ia IIC T6 Gb and Ex ia IIIC T85°C Db**

For connecting to one intrinsically safe circuit

Max. input voltage	U_i	60 V
Max. input current	I_i	100 mA
Max. input power	P_i	6 W
Max. inner capacity	C_i	negligible
Max. inner inductance	L_i	negligible

Ambient temperature range $-25^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

**Technical data for Pull-Wire Emergency Stop Switches
type EX-I-RS655... in type of protection Ex tb IIIC T85°C Db**

Rated insulation voltage	U_i	300 V
Utilization category		AC-15: 230 V / 3 A DC-13: 24 V / 3 A
Rated surge voltage	U_{imp}	4 kV

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**Technical data for Pull-Wire Emergency Stop Switches
type EX-RS655...-DS-2D / EX-RS655...-DS-2D in type of protection Ex tb IIIC T85°C Db**

Rated insulation voltage	U_i	300 V
Utilization category		AC-15: 230 V / 3 A DC-13: 24 V / 3 A
Rated surge voltage	U_{imp}	4 kV

Ambient temperature range $-25^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

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Rated surge voltage U_{imp} 4 kV

Ambient temperature range $-25^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$

List of used equipment and components

Gerät/ Device	Hersteller/ Manufacturer	Typ/ Type	Ex-Kennzeichnung/ Ex-Marking	Bescheinigung-Nr./ Certificate no.
Switching Element, Ex- SE Series	ACE Schmersal Elektroeletrônica Industrial Ltda	Ex-SE Series	Ex db eb IIC	DEMKO 20 ATEX 2369U Rev. 0

- (16) Test-Report No. 557 / Ex 8428.02 / 19
- (17) Special Conditions for safe use
None
- (18) Basic Safety and Health Requirements
standard Covered by afore mentioned

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-03-02

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