

(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 8339 X

Issue: 03

- (4) Equipment: **Ex p System**
Type a621/1*-**-**** (a = 7, 8)**
- (5) Manufacturer: **R. STAHL Schaltgeräte GmbH**
- (6) Address: **Am Bahnhof 30, 74638 Waldenburg, Germany**
- (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 8339.03 / 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 60079-2: 2014 / AC: 2015 EN 60079-11: 2012
EN IEC 60079-7: 2015 / A1: 2018 EN 60079-18: 2015 / AC: 2018-09 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 3 (1) G Ex ec mc ia [pzc Gc][ia Ga] IIC T6 Gc** Type 7621/1*-1***-****;
- II 3 (1) D Ex tb [pzc Dc][ia Da] IIIC T80°C Dc** Type 7621/1*-1***-****;
- II 2 (1) G Ex eb mb ia [pxb Gb] [ia Ga] IIC T4 Gb** Type 8621/1*-1(or 3)***-****;
- II 2 (1) D Ex tb [pxb Db] [ia Da] IIIC T130°C Db** Type 8621/1*-1(or 3)***-****;
- II 2 (1) G Ex db [pxb Gb][ia Ga] IIC T4 Gb** Type 8621/1*-2***-****;
- II 2 (1) D Ex tb [pxb Db][ia Da] IIIC T130°C Db** Type 8621/1*-2***-****;

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2022-08-09

Dipl.-Ing. Christian Mehrhoff

This EU-Type Examination Certificate without signature and stamp shall not be valid.
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
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(13)

Annex

(14)

EU Type Examination Certificate

TÜV 19 ATEX 8339 X

Issue: 03

(15)

Description of equipment

15.1 Equipment and type:

Ex p System, Type a621/1*-****-**** (a = 7, 8)

15.2 Description / Details of Change

General product information:

The Ex p System type 7621/1*-****-**** is the pressurization system for level of protection Ex pzc, while the Ex p System type 8621/1*-****-**** is the pressurization system for level of protection Ex pxb.

The Ex p systems consist of the main components relevant for the type of protection Ex pzc or Ex pxb using the Ex p controller type 7622/1 or 8622/1 as the safety device:

- for detection of the minimum overpressure of the pressurized enclosure and automatic switch off operation if the minimum pressure falls below the value specified.
- for control of automated purging starting the purge time after minimum flow and pressure conditions are reached and control of pressure and flow during purging.

The Purge valves used are separately certified for the required EPL of the system.

The pre-fuse required for the purge valve is designed as an interchangeable cartridge located at the Ex p Controller available in several ratings to match with the purge valves used.

The pressure monitor Type 8622/3* serves as the vent and is equipped with an orifice for detection of the purge flow.

All components listed below for the different system configurations may either be mounted inside or outside the Ex p control panel.

The Ex p System a621/1*-****-**** consists of at least the 4 main components:

- a) Ex p Controller type a622/11-****-**** (a = 7, 8)
- b) Ex p Purge Valve (separately certified)
- c) Ex p Pre-Fuse type 8622/63-000* for Ex p Purge valve
- d) Ex p Pressure Monitor type 8622/3*

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The following additional components can be used:

- e) Whirlwind Air Cooler
- f) Tube-Set for pressure point connection for internal mounting

Type designation of the Ex p System:

Ex p System	Type	a	621/	b	c	-	d	e	f	g	-	h	i	j	k
EPL:	Gc, Dc	7													
	Gb, Db	8													
Ex p system		1													
Version:	Flowsolve	1													
	General purpose	2													
Type of protection of Ex p Controller	Ex e	1													
	Ex d	2													
	Ex m	3													
Cable Entries at Ex p Controller	3xM16 + 1xM20	0													
	4xM16	1													
	2xM25	2													
	3xM20	3													
Supply voltage:	230 V AC	0													
	115 V AC	1													
	24 V DC	2													
Pressure range:	0-25 mbar	0													
	30-350 mbar	1													
	100-1000 mbar	2													
Power Out circuit	Fed from supply	0													
	Potential free	1													
Variation not relevant for Ex-Protection		*													

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Type designation of the Ex p Controller:

Ex p Controller	Type	a	622/	b	c	-	d	e	f	g	-	h	i	j	k
EPL:	Gc, Dc	7													
	Gb, Db	8													
Ex p controller		1													
Version:	1 st version	1													
Enclosure type of protection	Ex e	1													
	Ex d	2													
	Ex m	3													
Cable Entries	3xM16 + 1xM20	0													
	4xM16	1													
	2xM25	2													
	3xM20	3													
Supply voltage:	230 V AC	0													
	115 V AC	1													
	24 V DC	2													
Pressure range:	0-25 mbar	0													
	30-350 mbar	1													
	100-1000 mbar	2													
Power Out circuit	Fed from supply	0													
	Potential free	1													
Variation not relevant for Ex-Protection		*													

Details of Change:

- Standard update to the latest versions of the listed standards
- Ex p System Type 8621/1*-3***-**** with controller Type 8622/11-3***-**** was added.
- Minor changes in the documents
- Software update

Technical Data:
Electrical Data for Ex p Controller:
Non-intrinsically safe circuits (level of protection “eb” or “ec”)

 Maximum safety voltage: $U_m \leq 253$ V AC or DC

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1. Type a622/11-**0*-0*** (a = 7, 8)

Nominal values are as follows:

Power supply

Terminals 1 (L), 2 (N), 9 (PE)

$$U_N = 230 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$$

$$I_N = I_{\text{Power Out}} + 33 \text{ mA}$$

$$P_N = P_{\text{Power Out}} + 3 \text{ W}$$

Power Out

Terminals 3 (L), 4 (N), 10 (PE)

$$U_N = 230 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$$

$$I_N = 3 \text{ A } \cos \phi \geq 0.7 \text{ or } 4 \text{ A } \cos \phi = 1$$

PWM Output

Terminals 5 (L), 6 (N), 11 (PE)

$$U_N = 230 \text{ V AC } (\pm 10\%) \text{ 280 Hz (pulse width modulation)}$$

$$I_N = 80 \text{ mA}$$

2. Type a622/11-**1*-0*** (a = 7, 8)

Nominal values are as follows:

Power supply

Terminals 1 (L), 2 (N), 9 (PE)

$$U_N = 115 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$$

$$I_N = I_{\text{Power Out}} + 42 \text{ mA}$$

$$P_N = P_{\text{Power Out}} + 2 \text{ W}$$

Power Out

Terminals 3 (L), 4 (N), 10 (PE)

$$U_N = 115 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$$

$$I_N = 3 \text{ A } \cos \phi \geq 0.7 \text{ or } 4 \text{ A } \cos \phi = 1$$

PWM Output

Terminals 5 (L), 6 (N), 11 (PE)

$$U_N = 115 \text{ V AC } (\pm 10\%) \text{ 280 Hz (pulse width modulation)}$$

$$I_N = 160 \text{ mA}$$

3. Type a622/11-**2*-0*** (a = 7, 8)

Nominal values are as follows.

Power Supply

Terminals 1 (+), 2 (-)

$$U_N = 24 \text{ V DC (20,4 to 28,8 V DC)}$$

$$I_N = I_{\text{Power Out}} + 60 \text{ mA (at 24 V DC)}$$

$$P_N = P_{\text{Power Out}} + 1,5 \text{ W}$$

Power Out

Terminals 3 (+), 4 (-)

$$U_N = 24 \text{ V DC (20,4 to 28,8 V DC)}$$

$$I_N = 3 \text{ A}$$

PWM Output

Terminals 5 (+), 6 (-)

$$U_N = 24 \text{ V DC (20,4 to 28,8 V DC)}$$

$$I_N = 0,75 \text{ A } 280 \text{ Hz (pulse width modulation)}$$

$$P_N = 18 \text{ W}$$

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4. Type a622/11-*-1*** (a = 7, 8)(f = 0, 1, 2)**
Power Out (potential free contact, normally open)

Terminals 3 (+), 4 (-)

 $U_N = 30 \text{ V DC}$
 $I_N = 3 \text{ A DC}$

or

 $U_N = 115 \text{ to } 230 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$
 $I_N = 3 \text{ A } \cos \phi \geq 0.7 \text{ or } 4 \text{ A } \cos \phi = 1$
5. Type a622/11-*-**** (a = 7, 8)(f = 0, 1, 2)**
Signal Out (potential free contact, normally open)

Terminals 7, 8

 $U_N = 30 \text{ V DC}$
 $I_N = 3 \text{ A DC}$

or

 $U_N = 115 \text{ to } 230 \text{ V AC } (\pm 10\%) \text{ 48-62 Hz}$
 $I_N = 3 \text{ A } \cos \phi \geq 0.7 \text{ or } 4 \text{ A } \cos \phi = 1$
Earth/ground

Terminals 9, 10, 11

For type 7622/11-1***-**** and 8622/11-1***-**** the terminals are interconnected to each other but separated from all other circuits for up to 230 V AC ($\pm 10\%$).

For type 8622/11-2***-**** the terminals are internally connected to the metal enclosure, but separated from all other circuits for up to 230 V AC ($\pm 10\%$)

Intrinsically safe circuits (level of protection "ia")

(Terminal: PROGR, TEMPERATURE, BYPASS)

PROGR Terminals 14, 15

TEMPERATURE Terminals 21, 22

BYPASS Terminals 23, 24

The intrinsically safe circuits are galvanically isolated from the non-intrinsically safe circuits and from ground. As all three circuits reference to a common ground, the total current of all three circuits is considered.

 $U_o = 6.51 \text{ V} \quad C_i \approx 0 \text{ nF}$
 $I_o = 20.8 \text{ mA} \quad L_i \approx 0 \text{ } \mu\text{H}$
 $P_o = 34 \text{ mW}$

Linear characteristic

The values of L_o and C_o in the following table are the maximum values for combined inductance and capacitance. The values for L_o and C_o marked in grey are the values determined according to the curves and tables of EN 60079-11, Annex A.

L _o and C _o values for gas group IIC							
L _o [mH]	100	20	10	2	1	0.1	0.002
C _o [μF]	0.67	1.30	1.40	2.00	2.30	4.10	22.0
L _o and C _o values for groups IIB / IIIC							
L _o [mH]	100	20	5.0	1.0	0.2	0.05	0.002
C _o [μF]	5.00	6.80	8.80	13.0	20.0	32.0	500

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Environmental Data:

Ambient temperature range: $-30^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$

(16) Test-Report No. 557 / Ex 8339.03 / 19

(17) Schedule of Limitations

1. When the system is attached to an enclosure, the whole system shall be assessed according to EN 60079-2.
2. The system shall not be operated in explosive dust atmospheres when using a Whirlwind cooler.

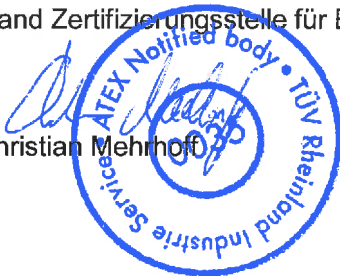
(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

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