



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx TUR 19.0033X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 3 [Issue 2 \(2020-08-31\)](#)
Date of Issue: 2022-08-09 [Issue 1 \(2019-11-18\)](#)
[Issue 0 \(2019-07-09\)](#)
Applicant: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30, D-74638 Waldenburg
Germany
Equipment: **Ex p System, Type a621/1*-****-****, a = 7, 8**
Optional accessory:
Type of Protection: **Ex d, p, e, i, m, t**
Marking: Type 7621/1*-1***-****:
Ex ec mc ia [pzc Gc] [ia Ga] IIC T6 Gc
Ex tb [pzc Dc] [ia Da] IIIC T80°C Dc
Type 8621/1*-1(or 3)***-****:
Ex eb mb ia [pxb Gb] [ia Ga] IIC T4 Gb
Ex tb [pxb Db] [ia Da] IIIC T130°C Db
Type 8621/1*-2***-****:
Ex db [pxb Gb][ia Ga] IIC T4 Gb
Ex tb [pxb Db][ia Da] IIIC T130°C Db
Ambient temperature: $T_a = -30\text{ °C} \dots +60\text{ °C}$

Approved for issue on behalf of the IECEx
Certification Body:

Christian Mehrhoff

Position:

Assigned certifier

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

TUV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Cologne
Germany





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Date of issue: 2022-08-09

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Manufacturer: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30, D-74638 Waldenburg
Germany

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014-06](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

[IEC 60079-2:2014-07](#) Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"
Edition:6

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/TUR/ExTR19.0033/03](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/17](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Ex p System

Type a621/1*-****-****, a = 7, 8

See attachment for further details

SPECIFIC CONDITIONS OF USE: YES as shown below:

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



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- 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

Annex:

[IECEX_TUR_19.0033X_Attachment_1.pdf](#)



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

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30,
D-74638 Waldenburg, Germany

Subject and type

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

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*

The following additional components can be used:

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



Type designation 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: | Flowserve | 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 | | * | | | | | | | | | | | | | |



Type designation 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 | | * | | | | | | | | | | | | | |



Electrical Data for Ex p Controller:

Non-intrinsically safe circuits (level of protection “eb” or “ec”)

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

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 (-)

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

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

$P_N = 18 \text{ W}$



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***-**** and 8622/11-3***-**** 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.

$U_o = 6.51 \text{ V}$

$I_o = 20.8 \text{ mA}$

$P_o = 34 \text{ mW}$

Linear characteristic

$C_i \approx 0 \text{ nF}$

$L_i \approx 0 \text{ } \mu\text{H}$

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 IEC 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 [μ F] | 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 [μ F] | 5.00 | 6.80 | 8.80 | 13.0 | 20.0 | 32.0 | 500 |