

Operation Manual



Control Cabinet Type A31-P-******

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1. Product Description

The control cabinet, type A31-P*-***** is a non-portable installed, explosion protected electrical equipment for use in explosive areas by zone 1 or zone 21.

It is used for the installation of explosion proof components and/or non-explosion proof components. The control cabinet basically consists of internal fixing plates at the internal rear side for mounting components.

The control cabinet consists of the materials polyester, coated steel plate or stainless steel. It contains in category 2G a separate certified monitoring system. The monitoring system has the function of "Ex px" and "Ex t" in category 2D respectively.

The construction and functionality of the Control Cabinet for the use in the marked Ex zones is tested and documented by Exepd GmbH piece by piece. The passed quality test is shown by marking the Control Cabinet with the Ex type label.

2. Normal Handling

The Control Cabinet A31-P*-***** is built for local installation in Ex zone 1 or zone 21. It is not allowed to install the product in zone 0 or zone 20.

Inside the Control Cabinet there are explosion protected and/or not explosions protected electrical and mechanical equipment and their accessories installed.

The individual type label shows all the electrical and for the installation in hazardous area required data.

If there is no information about the ambient temperature on the type label, the Control Cabinet can be used in the temperature range of -20°C up to 40°C.

It is prohibited to make any changes on the Control Cabinet without contacting the manufacturer. This applies to the associated safety equipment, and the equipment mounted on or in the Control cabinet.

To follow this manual help to prevent permanent deformation of the Control Cabinet by an increased pressure and thus a hazard to people and equipment. The purge gas supply shall not exceed the limits, this is necessary for the safety operation of the Control Cabinet. If another purge gas is used as air, it must be ensured that the minimum oxygen content in the ambient space is not exceeded. Maybe a separate purge gas exhaust line needs to be placed outdoors.

3. Used Standards

(Depending on the assembled components)

EN 60079-0 / General requirements
EN 60079-2 / Overpressure monitoring "p"
EN 60079-7
EN 60079-11

4. Technical Data

Cabinet material

Type A31-P1-*****	Polyester
Type A31-P3-*****	Stainless steel V2A
Type A31-P4-*****	Stainless steel V4A
Type A31-P5-*****	Sheet plate

Protection according to 60529/IEC 60529: IP 55 up to IP 66

Ambient temperature range:

(Please refer to type label for details)

Temperature class T3, T4, or T5	max. -40°C up to + 60°C
Temperature class T6	max. -20°C up to + 40°C

Maximum surface Temperature (II 2D) 80°C

Mechanical strength to DIN EN 60079-2

Minimum pressure: 80 Pa (0.8 mbar)
Maximum pressure: 2500 Pa (25.0 mbar)
Maximum test pressure: 3750 Pa (37,5 mbar)

Quality of purge gas

The quality of the purge gas must be in accordance with ISO 8573-1 Class 543 correspond to:

Residual dust: less than 40 μ m
Residual water dew point +3 ° C
Residual oil content: 1 mg / m³
maximum temperature: + 40 ° C

Explosion protection:

(Please refer to type label for details)

⊕ II 2(1) G/D
Ex px [ia/ib] IIB/IIC T3/T4/T5/T6 Gb und/oder
Ex epX [ia/ib] IIB/IIC T3/T4/T5/T6 Gb oder
Ex pD 21 T80°C Db

EC type examination certificate: TPS 07 ATEX 61951 2X

5. Electrical Data

(Please refer to type label for details)

Maximum rated voltage:	1500 V AC/DC
Protective gas:	air or inert gas (max. temperature +40°C)
Maximum power loss:	1000 Watt (extension by request)

(For special applications, a safety device is installed to monitor the temperature which interrupt the electrical power supply automatically, see the respective wiring diagram).

6. Components / Cable Glands

With the Control Cabinet only separate tested or certified components like terminals, switches and Control and signal units are used. Not used holes for cable glands or operators have to be closed by certified plugs.

Assembly and safety instruction of the component manufacturer must be considered. All equipment built into the surface of the Control Cabinet or installation equipment is according applicable European standards or if there are no harmonized European standards present the equipment meets relevant DIN VDE/VDE standards or other equivalent national or European standards.

The minimum degree of protection of IP 55 of the Control cabinet has not been reduced by the installation.

All built-in equipment installed in the Control cabinet is firmly mounted on the mounting plate of the Control cabinet according the device-specific documentation. Each Control unit includes an electrical circuit/wiring diagram of the installed equipment in addition to the parts list.

Please note: The creator of the electrical circuit/wiring diagram is liable for the proper functioning of the installed equipment and interconnection, this is not part of the ex-
testing! Equipment who are changed for the proper ex p function (e.g. installation of holes for safe purging, limiting performance measures) are indicated on the devices by a label. An exchange of these devices, even if they are the same type, requires the consent of the Exepd GmbH.

7. Safety references

Devices in hazardous area must be installed, supervised, maintained and kept in good conditions by the owner of the plant. Part of this is an inspection after the transport to identify possible damages caused during the transport.

Only qualified workers are allowed to install and dismount as well as doing maintenance work on the Control Cabinet. All universally valid rules and laws and other binding directives for the safety of people and environment must be kept.



After the final test of the Control cabinet additional warning labels could be fixed on, e.g:

- When the key switch is used the Ex-protection is out of order
- Warning: Risk of electrostatic discharge
- Attention: Do not open when energized.
- Control cabinet contains intrinsically safe circuits
- Caution: Hot Surface to 85 ° C possible
- Warning choking hazard: nitrogen or inert gas is used.

Etc.

To observance the type and warning label is necessary for safe operation.

The Control Cabinet will be delivered pre-set and recorded in accordance with the requirements. A change of the setting is not allowed. If the Control Cabinet cannot operate properly, only the Exepd or a notified body is authorized to make changes to the settings.

8. Installation

Mounting

The Control Cabinet must be protected against aggressive and unusual environmental conditions which could cause damages on the equipment. This could be e.g. acids or high and low temperatures.

For installation, please refer to IEC / EN 60079-14 and other valid standards and directivities on the place of erection.

Information on the type label must be kept!

If cable glands marked with and "X" are in use, please refer to the operation manual of the gland supplier.

Installation

The wire connection must be made in such a manner, that the insulation material and the cores itself will not be damaged. Regarding the maximum possible cross connection and electrical data, please refer to the information written on the type label.

Metal enclosures, installed in hazardous area, must be connected to the general earth system via a cable with minimum 4 mm² cross section.

If intrinsically safe circuit installed in one box together with increased safe or energy limited circuits, the installation must protect the Ex i circuit from an increase of capacity, voltage and inductivity.

The air and creeping distance between Ex e and Ex i circuits must be kept by the internal installation.

9. Starting

Before the Control Cabinet is put into operation, the qualification for the use in the predominant hazardous area must be proofed according to the type label and the zone declaration.

It is not allowed to exceed the written data on the type label and the test protocol (declaration of conformity).

By using the equipment in hazardous area with combustible dust, dust layers > 5 mm must be removed. To protect the equipment from these circumstances also the installation of protection hoods are possible.

The functionality of the Control Cabinet itself, as well as its combination with the plant or machine must be tested before the first use.

Only use the Control Cabinet in clean and intact condition.

10. Special conditions for safe use

The pressurized system shall only be operation with the setting values which are given in test protocol (declaration of conformity) and on the type label.

The assembling of the components and viewing glasses in the door or wall system should only take place by Exepd.

Control Cabinets with pneumatic cooling systems must be declare with temperature class T3 or T4.

It is not allowed to install retrospectively additional equipment into a control cabinet.

11. Operation, Maintenance and Elimination of Disturbances

Devices in hazardous area must be installed, supervised, maintained and kept in good conditions by the owner of the plant. For information, refer to IEC / EN 60079-17. Only skilled workers are allowed to do maintenance and the elimination of disturbance work.

Before doing this work, the safety requirements must be kept!

For elimination of disturbances, only original spare parts after consulting with Exepd are allowed to use. Before using the boxes again, the safety requirements must be kept!

12. Accessories and spare parts

Please refer to www.exepd.de

13. Service address

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EU-Konformitätserklärung
EU-Declaration of Conformity



Dokument A31-P0-C0001-6

Hersteller/Manufacturer:

Exepd GmbH, i_PARK TAUBERFRANKEN 23, D-97922 Lauda-Königshofen

Gegenstand der Erklärung/Object of the declaration:*

Steuerschrank Typ A31-P*-*****

Control cabinet type A31-P*-*****

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsvorschriften der Union/The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/34/EU (-ABI. L 96 / 29.03.2016-)

Die Anwendung der folgenden einschlägigen harmonisierten Normen oder technischen Spezifikationen wurde als hilfreich erachtet, ganz oder teilweise die Konformität mit den wesentlichen Anforderungen zu erfüllen/The use of the following relevant harmonised standards or references to other technical specifications were helpfully, to fulfil totally or partly the conformity with the requirements:

EN 60079-0:2012/A11:2013

(IEC 60079-0:2011, modifiziert + IS1:2013);

EN 60079-2:2014 (IEC 60079-2:2014);

EN 60079-7:2015 (IEC 60079-7:2015)

Kennzeichnung und Hauptzündschutzart/Marking and main type of protection:*

⊕ II 2(1) GD

Ex pxb [ia/ib] IIB/IIC T3/T4/T5/T6 Gb

Ex epxb [ia/ib] IIB/IIC T3/T4/T5/T6 Gb

Ex pxb [ia/ib] IIIB/IIIC TXX°C Db

CE 0123

TPS 07 ATEX 61951 2X

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Qualitätssicherung Produktion gemäß/Production quality system according:

2014/34/EU

Zertifiziert durch/ certified by

TÜV Süd Product Service GmbH (0123)

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Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller/This declaration of conformity is issued under the sole responsibility of the manufacturer.

Lauda-Königshofen, den 01.08.2018

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*Die vollständige Produktbeschreibung und verwendete Zündschutzprinzipien sind in der zugehörigen Artikelbeschreibung zur Artikelnummer beschrieben (-> Auftragsdokumentation)
The product and used protection principles are described in the relevant article description according the article number (-> order documents)