



## Certificates

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Device platform ORCA  
ORCA01E\* / ORCA01M\*  
Panel-mount devices / Operator Stations  
Panel PC / Thin Clients  
Direct Monitor



THE STRONGEST LINK.

HW-Rev. E/M5xA:  
HW-Rev. E/M79A:

01.01.02  
01.01.02

Certificates version:  
Issue:

01.00.02  
27.08.2024

## Disclaimer

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We reserve the right to change our products and their specifications at any time, provided it is in the interest of technical progress. The information in the current manual (online or on CD / DVD / USB stick) or in the operating instructions included in the delivery applies.

### Trademarks

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# 1 Preface



This document contains all valid certificates for the ORCA01E\* / ORCA01M\* device series.

All certificates are also available on R. STAHL HMI Systems GmbH's website and on the CDs / DVDs / USB sticks included in the delivery and a copy can also be ordered from R. STAHL HMI Systems GmbH.

The EU, USA UL, Canada UL and China CCC declarations / certificates of conformity can be found in the Operating Instructions OI\_ORCA01.



## 2 ATEX EU type examination certificate

[1]

### EU-TYPE EXAMINATION CERTIFICATE



[2]

**Equipment or Protective System intended for use  
in Potentially Explosive Atmospheres  
Directive 2014/34/EU**

[3] EU-Type Examination Certificate Number: **UL 23 ATEX 2902X Rev. 0**[4] Product: **Operator Terminal, HMI Series ORCA**[5] Manufacturer: **R. STAHL HMI Systems GmbH**[6] Address: **Adolf-Grimme Allee 8, 50829 Köln, Germany**

[7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. **US/UL/ExTR23.0008/00**.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018  
EN 60079-11:2012**




**EN 60079-5:2015  
EN 60079-31:2014**

**EN IEC 60079-7:2015/A1:2018**

[10] If the sign "X" is placed after the certificate number, it indicates that the product 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 construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

[12] The marking of the product shall include the following:

	II 2(1) G	Ex eb ib qb [ib] [ia Ga] IIC T4 Gb	(ORCA01E...)
	II 2(1) D	Ex tb [ib] [ia Da] IIIC T115°C Db	(ORCA01E...)
	II 3(1) G	Ex ec ib qb [ib Gb] [ia Ga] IIC T4 Gc	(ORCA01M...)
	II 3(1) D	Ex tc [ib Db] [ia Da] IIIC T115°C Dc	(ORCA01M...)

**Certification Manager**

Thomas Wilson



**Notified Body**

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

**Date of issue:** 2023-04-04

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark  
Tel. +45 44 85 65 65, [info.dk@ul.com](mailto:info.dk@ul.com), [www.ul.com](http://www.ul.com)

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[13]

**Schedule**

[14]

**EU-TYPE EXAMINATION CERTIFICATE No.**

**UL 23 ATEX 2902X Rev. 0**

[15]

Description of Product

The HMI series ORCA is an electronic operating and monitoring device. It is designed to operate, visualize, and control processes in hazardous areas. The HMI series ORCA consist of an electronic module named E-Box, available in two different sizes, E-Box P and E-Box S, and of a display module named D-Box, available in three different sizes, D-Box 3, D-Box 4, and D-Box 6, which are mounted together. For service proposals, these modules are interchangeable. The connection between the E-box and D-box are factory wired.

The E-Box contains the electronics and the Ex e and Ex i connection areas. The electronics include the power supply, various electrical components such as the CPU, intrinsic safety components, interface converter, etc. The connection of external wires is realized via integrated connection compartments for Ex e circuits, via certified Ex e terminal blocks, and Ex i circuits at the E-Box.

The D-Box is available in different sizes to realize different display sizes and resolutions. Components used within D-box include a touch sensor, sensor buttons, RFID modules, etc.

The HMI series "ORCA01E..." is suitable for use in Zone 1 and Zone 21. The E-box and the D-box is powder-filled "qb" for the ORCA01E.

The HMI series "ORCA01M..." is suitable for use in Zone 2 and Zone 22. The E-box is powder-filled "qb" and the D-box is protection method "ec" without the powder-filling for the ORCA 01M.

Nomenclature for type ORCA:

ORCAaabbccdeffgghh\*

aa:	Revision
01	Revision 01
b:	Zone
E	Zone 1 / 21 (EPL Gb / Db)
M	Zone 2 / 22 (EPL Gc / Dc)
cc:	Technology
00	None*
TC	Technology Thin Client / Panel PC
DM	Technology Direct Monitor
d:	E-Box
0	None*
S	Standard
P	Pro
e:	D-Box
0	None*
3	Size 3
4	Size 4
6	Size 6
ff:	Power
00	None*
AC	AC Power
DC	DC Power
gg:	Fiber Optic
00	None
MM	MM
SM	SM
hh:	RFID
00	None
C5	RFID Crypt
C6	RFID ASC
C8	RFID PC-SC

\* = any alphanumeric or symbolic characters, without relevance for explosion protection

+ Note – ORCA is a combination of an E-Box and D-Box that are only certified together. Each D-Box and E-Box has their own nomenclature configuration depending on options included and both the D-Box and E-Box nomenclature is included on the label drawing. When option "0" or "00" is selected as noted by the "+", this indicates that the option is not a part of the respective D-Box or the E-Box configuration.

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[13]

[14]

**Schedule**  
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The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 3) to the scope of EN 60079-28:2015 .

Temperature range

The ambient temperature range is -20 °C to +55 °C.

Electrical data

<b>Electrical Parameters:</b>		
<b>Non-intrinsically safe circuits:</b>		
<b>Terminal block X1 POWER</b>		
Non-intrinsically safe supply circuits (Power)		
Nominal voltage		
For DC version (ORCAaabcdeffgghh* with "ff" = "DC": 24 VDC (19.2...31.2 VDC)		
For AC version (ORCAaabcdeffgghh* with "ff" = "AC": 100/230 VAC (85...250 VAC), (47...63Hz)		
Nominal current		
For DC version (ORCAaabcdeffgghh* with "d" = "P" and "ff" = "DC": I <sub>max</sub> ≤ 6.3 A I <sub>nom</sub> = 4.2A		
For DC version (ORCAaabcdeffgghh* with "d" = "S" and "ff" = "DC": I <sub>max</sub> ≤ 4 A I <sub>nom</sub> = 2.7A		
For AC version (ORCAaabcdeffgghh* with "d" = "P" and "ff" = "AC": I <sub>max</sub> ≤ 2 A I <sub>nom</sub> = 1.4A		
Nominal power	P <sub>nom</sub>	≤ 150W
Max. input voltage	U <sub>m</sub>	= 250VAC
<b>Terminal block X2</b>		
Non-intrinsically safe circuits X2 (LAN 0) and		
Nominal voltage		
Max. input voltage		
	U <sub>nom</sub>	= 5V AC/DC
	U <sub>m</sub>	= 30V DC
<b>Terminal block X3</b>		
Non-intrinsically safe circuits X3 (USB 0)		
Nominal voltage		
Max. input voltage		
	U <sub>nom</sub>	= 5V AC/DC
	U <sub>m</sub>	= 30V AC
<b>Terminal block X4</b>		
Non-intrinsically safe circuits X4 (SERIAL)		
Nominal voltage		
Max. input voltage		
	U <sub>nom</sub>	= 12V AC/DC
	U <sub>m</sub>	= 30V AC
<b>Terminal block X10</b>		
This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P"		
In case of Cooper LAN 1 interface:		
Non-intrinsically safe circuits X10		
Nominal voltage		
Max. input voltage		
	U <sub>nom</sub>	= 5V AC/DC
	U <sub>m</sub>	= 30V DC
<b>Terminal block X11</b>		
This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P"		
Non-intrinsically safe circuits X11 (USB 3)		
Nominal voltage		
Max. input voltage		
	U <sub>nom</sub>	= 5V AC/DC
	U <sub>m</sub>	= 30V AC

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[14]

**Schedule**  
**EU-TYPE EXAMINATION CERTIFICATE No.**  
**UL 23 ATEX 2902X Rev. 0**

<p><b>Terminal block X12</b></p> <p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P" This interface can exist according to the option with one of the following configurations:</p> <p>In case of AUDIO interface: Non-intrinsically safe circuits X12 (AUDIO)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Nominal voltage</td> <td style="width: 20%;">Unom</td> <td style="width: 30%;">= 12V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td>Um</td> <td>= 30V AC</td> </tr> </table> <p>For passive apparatus only.</p> <p>In case of USB 2 interface: Non-intrinsically safe circuits X12 (USB)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Nominal voltage</td> <td style="width: 20%;">Unom</td> <td style="width: 30%;">= 5V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td>Um</td> <td>= 30V AC</td> </tr> </table>	Nominal voltage	Unom	= 12V AC/DC	Max. input voltage	Um	= 30V AC	Nominal voltage	Unom	= 5V AC/DC	Max. input voltage	Um	= 30V AC																							
Nominal voltage	Unom	= 12V AC/DC																																	
Max. input voltage	Um	= 30V AC																																	
Nominal voltage	Unom	= 5V AC/DC																																	
Max. input voltage	Um	= 30V AC																																	
<p><b>Terminal block X13</b></p> <p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P" Non-intrinsically safe circuits X13 (USB 3)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Nominal voltage</td> <td style="width: 20%;">Unom</td> <td style="width: 30%;">= 5V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td>Um</td> <td>= 30V AC</td> </tr> </table>	Nominal voltage	Unom	= 5V AC/DC	Max. input voltage	Um	= 30V AC																													
Nominal voltage	Unom	= 5V AC/DC																																	
Max. input voltage	Um	= 30V AC																																	
<p><b>Terminal block X14 Service Port</b></p> <p>This port is not allowed to be used. It is restricted to internal and service use and only in safe and secure areas!</p>																																			
<p><b>Terminal blocks X15 and X16</b></p> <p>These interfaces exist optionally in ORCAaabcdeffgghh* with "d" = "P"</p> <p>In case of Optical fiber X15-LAN1-FO and X16-LAN2-FO interface: Optical radiation sources for use in EPL Gb or Gc and Db or Dc applications which comply with Class 1 limits in accordance with IEC 60825-1 is used.</p>																																			
<p><b>Intrinsically safe circuits (level of protection Ex ia IIC resp. Ex ia IIIC):</b></p>																																			
<p><b>Terminal blocks X5 and X6</b></p> <p>For connection of passive intrinsically safe apparatus e.g., keyboard and mouse. For each terminal blocks X5 (USB4) and X6 (USB5): Terminals 1(+), 2(D-), 3(D+), 4(GND).</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Max. output voltage</td> <td style="width: 50%;">Uo = 5.36VDC</td> </tr> <tr> <td>Max. output current</td> <td>Io = 249mA</td> </tr> <tr> <td>Max. output power</td> <td>Po = 0.341W</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Max. external capacitance</td> <td style="width: 50%;">Co = 65uF</td> </tr> <tr> <td>for max. external inductance</td> <td>Lo = 1uH</td> </tr> <tr> <td>or</td> <td></td> </tr> <tr> <td>Max. external capacitance</td> <td>Co = 46uF</td> </tr> <tr> <td>for max. external inductance</td> <td>Lo = 2uH</td> </tr> <tr> <td>or</td> <td></td> </tr> <tr> <td>Max. external capacitance</td> <td>Co = 32uF</td> </tr> <tr> <td>for max. external inductance</td> <td>Lo = 3uH</td> </tr> <tr> <td>or</td> <td></td> </tr> <tr> <td>Max. external capacitance</td> <td>Co = 25uF</td> </tr> <tr> <td>for max. external inductance</td> <td>Lo = 4 uH</td> </tr> <tr> <td>or</td> <td></td> </tr> <tr> <td>Max. external capacitance</td> <td>Co = 21uF</td> </tr> <tr> <td>for max. external inductance</td> <td>Lo = 5uH</td> </tr> </table>	Max. output voltage	Uo = 5.36VDC	Max. output current	Io = 249mA	Max. output power	Po = 0.341W	Max. external capacitance	Co = 65uF	for max. external inductance	Lo = 1uH	or		Max. external capacitance	Co = 46uF	for max. external inductance	Lo = 2uH	or		Max. external capacitance	Co = 32uF	for max. external inductance	Lo = 3uH	or		Max. external capacitance	Co = 25uF	for max. external inductance	Lo = 4 uH	or		Max. external capacitance	Co = 21uF	for max. external inductance	Lo = 5uH	
Max. output voltage	Uo = 5.36VDC																																		
Max. output current	Io = 249mA																																		
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or																																			
Max. external capacitance	Co = 21uF																																		
for max. external inductance	Lo = 5uH																																		
<p><b>Terminal block X9</b></p> <p>For connection of passive intrinsically safe apparatus e.g., a power button. For each terminal blocks X9 (BTN - Power Button) Terminals 1(+), 2(GND).</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Max. output voltage</td> <td style="width: 50%;">Uo = 5.36V DC</td> </tr> <tr> <td>Max. output current</td> <td>Io = 45mA</td> </tr> </table>	Max. output voltage	Uo = 5.36V DC	Max. output current	Io = 45mA																															
Max. output voltage	Uo = 5.36V DC																																		
Max. output current	Io = 45mA																																		

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[13]

**Schedule**

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**EU-TYPE EXAMINATION CERTIFICATE No.****UL 23 ATEX 2902X Rev. 0**

Max. output power	Po = 0.061W
Linear output characteristics	
Max. external capacitance	Co = 64uF
For max. external inductance	Lo = 0.89uH
or	
Max. external capacitance	Co = 20uF
For max. external inductance	Lo = 3.89uH
<b>Intrinsically safe circuits (level of protection Ex ib IIC resp. Ex ib IIIC):</b>	
<b>Terminal blocks X7 and X8</b>	
For connection of passive intrinsically safe apparatus e.g., USB-Stick	
For each terminal blocks X7 (USB6) and X8 (USB6):	
Terminals 1(+), 2(D-), 3(D+), 4(GND).	
Max. output voltage	Uo = 5.54V DC
Max. output current	Io = 757mA
Max. output power	Po = 3.9W
Max. external capacitance	Co = 48.6uF
for max. external inductance	Lo = 1uH
or	
Max. external capacitance	Co = 33.6uF
for max. external inductance	Lo = 2uH
or	
Max. external capacitance	Co = 21.6uF
for max. external inductance	Lo = 3uH
or	
Max. external capacitance	Co = 15.6uF
for max. external inductance	Lo = 4 uH
or	
Max. external capacitance	Co = 11.6uF
for max. external inductance	Lo = 5uH

**Routine tests**

- Routine pressure test of the container is required for the D-Box 3, D-Box 4, and D-Box 6 with or without the filling material present per Clause 5.2.1 of EN 60079-5 with a required overpressure of 50 kPa for at least 10 seconds. There shall be no permanent deformation exceeding 0.5 mm in any of the dimensions.
- Routine insulation resistance test of the filling material is required on each lot of filling material prior to use per Clause 5.2.2 of EN 60079-5 with a test voltage of 1000 V dc  $\pm 5\%$ . The filling material complies with the requirement if leakage current does not exceed 10<sup>-9</sup> A. If the filling material does not initially comply with this requirement, then the lot may be dried and retested.
- A routine dielectric test per Clause 7.1 of EN IEC 60079-7 is required as follows:  
ORCA AC Models: 1500 V r.m.s. for 1 minute or 1800 V r.m.s. for 100 ms without dielectric breakdown occurring.

[16]

**Descriptive Documents**

The scheduled drawings are listed in the report no. provided under item no. [ 8 ] on page 1 of this EU-Type Examination Certificate.

[17]

**Specific conditions of use:**

- **WARNING** - Potential electrostatic charging hazard – Clean only with a damp cloth! See instructions.
- For ORCA01M only: The equipment is intended for installation in an area providing at least pollution degree 2 as defined within IEC 60664-1. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
- The intrinsically safe circuits are connected to earth. Along the intrinsically safe circuits, potential equalization must exist, or the intrinsically safe apparatus connected must meet the 500 V r.m.s. dielectric strength test between circuit and the frame.
- Maximum overvoltage category II according to IEC 60664-1 is permitted for the non-intrinsically safe circuits.

The following specific conditions of use are listed on the certificates of the following accessories, and they shall be taken into account if they are installed with ORCA:

- The Hummel AG cable glands Series HSK-K-MZ-Ex were tested for low risk of mechanical danger and shall be protected against higher impact energy levels.
- The CMP Products Type 737 non-metallic adaptors or reducers shall only be used with non-metallic cable glands.

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[13]

**Schedule**

[14]

**EU-TYPE EXAMINATION CERTIFICATE No.  
UL 23 ATEX 2902X Rev. 0**


[18]

Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The ORCA Series of devices in addition passed the tests for Ingress Protection to IP 65 in accordance with EN60529:1991+A1:2000+A2:2013.

The trademark  will be used as the company identifier on the marking label.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

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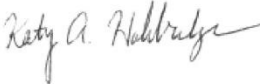



Form-ULID-000217 (DCS:00-IC-F0056-1) – Issue 27.0

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This certificate may only be reproduced in its entirety and without any change, schedule included.

### 3 IECEX certificate

		<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>	
<b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b> <b>IEC Certification System for Explosive Atmospheres</b> <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small>			
Certificate No.:	<b>IECEX UL 23.0007X</b>	Page 1 of 3	<a href="#">Certificate history:</a>
Status:	<b>Current</b>	Issue No: 0	
Date of Issue:	2023-04-04		
Applicant:	<b>R. STAHL HMI Systems GmbH</b> Adolf Grimme Allee 8 50829 Köln <b>Germany</b>		
Equipment:	<b>Operator Terminals, HMI Series ORCA</b>		
Optional accessory:			
Type of Protection:	<b>Increased Safety "eb", "ec", Intrinsic Safety "ib", "ia", Powder Filling "qb", Dust Ignition Protection by Enclosure "tb", "tc"</b>		
Marking:	For ORCA01E...: Ex eb ib qb [ib] [ia Ga] IIC T4 Gb Ex tb [ib] [ia Da] IIIC T115°C Db  For ORCA01M...: Ex ec ib qb [ib Gb] [ia Ga] IIC T4 Gc Ex tc [ib Db] [ia Da] IIIC T115°C Dc -20°C to 55°C		
Approved for issue on behalf of the IECEX Certification Body:	<b>Katy A. Holdredge</b>		
Position:	<b>Senior Staff Engineer</b>		
Signature: (for printed version)			
Date: (for printed version)	2023-04-04		
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting <a href="http://www.iecex.com">www.iecex.com</a> or use of this QR Code.			
Certificate issued by: <b>UL LLC</b> 333 Pfingsten Road Northbrook IL 60062-2096 United States of America			



# IECEX Certificate of Conformity

Certificate No.:	IECEX UL 23.0007X	Page 2 of 3
Date of issue:	2023-04-04	Issue No: 0

Manufacturer: **R. STAHL HMI Systems GmbH**  
 Adolf Grimme Allee 8  
 50829 Köln  
 Germany

Manufacturing locations: **R. STAHL HMI Systems GmbH**  
 Adolf Grimme Allee 8  
 50829 Köln  
 Germany

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 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0
- IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2
- IEC 60079-5:2022-05 Explosive atmospheres - Part 5: Equipment protection by powder filling "q"  
Edition:4.1
- 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:  
[US/UL/ExTR23.0008/00](#)

Quality Assessment Report:  
[DE/BVS/QAR06.0007/14](#)





## IECEX Certificate of Conformity

Certificate No.: **IECEX UL 23.0007X**

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Date of issue: 2023-04-04

Issue No: 0

### EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The HMI series ORCA is an electronic operating and monitoring device. It is designed to operate, visualize, and control processes in hazardous areas. The HMI series ORCA consist of an electronic module named E-Box, available in two different sizes, E-Box P and E-Box S, and of a display module named D-Box, available in three different sizes, D-Box 3, D-Box 4, and D-Box 6, which are mounted together. For service proposals, these modules are interchangeable. The connection between the E-box and D-box are factory wired.

The E-Box contains the electronics and the Ex e and Ex i connection areas. The electronics include the power supply, various electrical components such as the CPU, intrinsic safety components, interface converter, etc. The connection of external wires is realized via integrated connection compartments for Ex e circuits, via certified Ex e terminal blocks, and Ex i circuits at the E-Box.

The D-Box is available in different sizes to realize different display sizes and resolutions. Components used within D-box include a touch sensor, sensor buttons, RFID modules, etc.

The HMI series "ORCA01E..." is suitable for use in Zone 1 and Zone 21. The E-box and the D-box is powder-filled "qb" for the ORCA01E.

The HMI series "ORCA01M..." is suitable for use in Zone 2 and Zone 22. The E-box is powder-filled "qb" and the D-box is protection method "ec" without the powder-filling for the ORCA01M.

Please see Annex for additional information.

### SPECIFIC CONDITIONS OF USE: YES as shown below:


- WARNING - Potential electrostatic charging hazard – Clean only with a damp cloth! See instructions.
- For ORCA01M only: The equipment is intended for installation in an area providing at least pollution degree 2 as defined within IEC 60664-1. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
- The intrinsically safe circuits are connected to earth. Along the intrinsically safe circuits, potential equalization must exist or the intrinsically safe apparatus connected must meet the 500 V r.m.s dielectric strength test between circuit and the frame.
- Maximum overvoltage category II according to IEC 60664-1 is permitted for the non-intrinsically safe circuits.

The following specific conditions of safe use are listed on the certificates of the following accessories and they shall be taken into account if they are installed with ORCA:

- The Hummel AG cable glands Series HSK-K-MZ-Ex were tested for low risk of mechanical danger and shall be protected against higher impact energy levels.
- The CMP Products Type 737 non-metallic adaptors or reducers shall only be used with non-metallic cable glands.

### Annex:

[Annex to IECEX UL 23.0007X Issue 0.pdf](#)



## IECEX Certificate of Conformity

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Certificate No.: **IECEX UL 23.0007X**

Issue No.: 0

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**TYPE DESIGNATION**

ORCAaabcdeffgghh\*

aa: Revision  
01 Revision 01

b: Zone  
E Zone 1 / 21 (EPL Gb / Db)  
M Zone 2 / 22 (EPL Gc / Dc)

cc: Technology  
00 None\*  
TC Technology Thin Client / Panel PC  
DM Technology Direct Monitor

d: E-Box  
0 None\*  
S Standard  
P Pro

e: D-Box  
0 None\*  
3 Size 3  
4 Size 4  
6 Size 6


ff: Power  
00 None\*  
AC AC Power  
DC DC Power


gg: Fiber Optic  
00 None  
MM MM  
SM SM


hh: RFID  
00 None  
C5 RFID Crypt  
C6 RFID ASC  
C8 RFID PC-SC

\* = any alphanumeric or symbolic characters, without relevance for explosion protection

+ Note – ORCA is a combination of an E-Box and D-Box that are only certified together. Each D-Box and E-Box has their own nomenclature configuration depending on options included and both the D-Box and E-Box nomenclature is included on the label drawing. When option “0” or “00” is selected as noted by the “+”, this indicates that the option is not a part of the respective D-Box or the E-Box configuration.

	<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>	
Certificate No.:	IECEX UL 23.0007X	Issue No.: 0
		Page 2 of 6
<p><b><u>PARAMETERS RELATING TO THE SAFETY</u></b></p>		
<p><b>Non-intrinsically safe circuits:</b></p>		
<p><b>Terminal block X1 POWER</b></p>		
<p>Non-intrinsically safe supply circuits (Power)</p>		
<p>Nominal voltage</p>		
<p style="padding-left: 20px;">For DC version (ORCAaabcdeffgghh* with "ff" = "DC":</p>		
<p style="padding-left: 40px;">24 VDC (19.2...31.2 VDC)</p>		
<p style="padding-left: 20px;">For AC version (ORCAaabcdeffgghh* with "ff" = "AC":</p>		
<p style="padding-left: 40px;">100/230 VAC (85...250 VAC), (47...63Hz)</p>		
<p>Nominal current</p>		
<p style="padding-left: 20px;">For DC version (ORCAaabcdeffgghh* with "d" = "P" and "ff" = "DC":</p>		
<p style="padding-left: 40px;"><math>I_{max} \leq 6.3 \text{ A}</math></p>		
<p style="padding-left: 40px;"><math>I_{nom} = 4.2\text{A}</math></p>		
<p style="padding-left: 20px;">For DC version (ORCAaabcdeffgghh* with "d" = "S" and "ff" = "DC":</p>		
<p style="padding-left: 40px;"><math>I_{max} \leq 4 \text{ A}</math></p>		
<p style="padding-left: 40px;"><math>I_{nom} = 2.7\text{A}</math></p>		
<p style="padding-left: 20px;">For AC version (ORCAaabcdeffgghh* with "d" = "P" and "ff" = "AC":</p>		
<p style="padding-left: 40px;"><math>I_{max} \leq 2 \text{ A}</math></p>		
<p style="padding-left: 40px;"><math>I_{nom} = 1.4\text{A}</math></p>		
Nominal power	$P_{nom} \leq 150\text{W}$	
Max. input voltage	$U_m = 250\text{VAC}$	
<p><b>Terminal block X2</b></p>		
<p>Non-intrinsically safe circuits X2 (LAN 0) and</p>		
Nominal voltage	$U_{nom} = 5\text{V AC/DC}$	
Max. input voltage	$U_m = 30\text{V DC}$	
<p><b>Terminal block X3</b></p>		
<p>Non-intrinsically safe circuits X3 (USB 0)</p>		
Nominal voltage	$U_{nom} = 5\text{V AC/DC}$	
Max. input voltage	$U_m = 30\text{V AC}$	
<p><b>Terminal block X4</b></p>		
<p>Non-intrinsically safe circuits X4 (SERIAL)</p>		
Nominal voltage	$U_{nom} = 12\text{V AC/DC}$	
Max. input voltage	$U_m = 30\text{V AC}$	
<p><b>Terminal block X10</b></p>		
<p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P"</p>		
<p>In case of Cooper LAN 1 interface:</p>		
<p>Non-intrinsically safe circuits X10</p>		
Nominal voltage	$U_{nom} = 5\text{V AC/DC}$	
Max. input voltage	$U_m = 30\text{V DC}$	

	<h2 style="margin: 0;">IECEX Certificate of Conformity</h2>									
Certificate No.:	IECEX UL 23.0007X	Issue No.: 0 Page 3 of 6								
<p><b>Terminal block X11</b></p> <p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P" Non-intrinsically safe circuits X11 (USB 3)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Nominal voltage</td> <td style="text-align: right;">Unom = 5V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td style="text-align: right;">Um = 30V AC</td> </tr> </table>			Nominal voltage	Unom = 5V AC/DC	Max. input voltage	Um = 30V AC				
Nominal voltage	Unom = 5V AC/DC									
Max. input voltage	Um = 30V AC									
<p><b>Terminal block X12</b></p> <p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P" This interface can exist according to the option with one of the following configurations:</p> <p>In case of AUDIO interface: Non-intrinsically safe circuits X12 (AUDIO)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Nominal voltage</td> <td style="text-align: right;">Unom = 12V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td style="text-align: right;">Um = 30V AC</td> </tr> </table> <p>For passive apparatus only.</p> <p>In case of USB 2 interface: Non-intrinsically safe circuits X12 (USB)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Nominal voltage</td> <td style="text-align: right;">Unom = 5V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td style="text-align: right;">Um = 30V AC</td> </tr> </table>			Nominal voltage	Unom = 12V AC/DC	Max. input voltage	Um = 30V AC	Nominal voltage	Unom = 5V AC/DC	Max. input voltage	Um = 30V AC
Nominal voltage	Unom = 12V AC/DC									
Max. input voltage	Um = 30V AC									
Nominal voltage	Unom = 5V AC/DC									
Max. input voltage	Um = 30V AC									
<p><b>Terminal block X13</b></p> <p>This interface exist optionally in ORCAaabcdeffgghh* with "d" = "P" Non-intrinsically safe circuits X13 (USB 3)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Nominal voltage</td> <td style="text-align: right;">Unom = 5V AC/DC</td> </tr> <tr> <td>Max. input voltage</td> <td style="text-align: right;">Um = 30V AC</td> </tr> </table>			Nominal voltage	Unom = 5V AC/DC	Max. input voltage	Um = 30V AC				
Nominal voltage	Unom = 5V AC/DC									
Max. input voltage	Um = 30V AC									
<p><b>Terminal block X14 Service Port</b></p> <p>This port is not allowed to be used. It is restricted to internal and service use and only in safe and secure areas!</p>										
<p><b>Terminal blocks X15 and X16</b></p> <p>These interfaces exist optionally in ORCAaabcdeffgghh* with "d" = "P"</p> <p>In case of Optical fiber X15-LAN1-FO and X16-LAN2-FO interface: Optical radiation sources for use in EPL Gb or Gc and Db or Dc applications which comply with Class 1 limits in accordance with IEC 60825-1 is used.</p>										
<p><b>Intrinsically safe circuits (level of protection Ex ia IIC resp. Ex ia IIIC):</b></p>										



## IECEX Certificate of Conformity

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Certificate No.: **IECEX UL 23.0007X**

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<b>Terminal blocks X5 and X6</b>		<p><b>Intrinsically safe circuits (level of protection Ex ib IIC resp. Ex ib IIIC):</b></p>
<p>For connection of passive intrinsically safe apparatus e.g., keyboard and mouse.                      For each terminal blocks X5 (USB4) and X6 (USB5):                      Terminals 1(+), 2(D-), 3(D+), 4(GND).</p>		
Max. output voltage	U <sub>o</sub> = 5.36VDC	
Max. output current	I <sub>o</sub> = 249mA	
Max. output power	P <sub>o</sub> = 0.341W	
Max. external capacitance	C <sub>o</sub> = 65uF	
for max. external inductance	L <sub>o</sub> = 1uH	
or		
Max. external capacitance	C <sub>o</sub> = 46uF	
for max. external inductance	L <sub>o</sub> = 2uH	
or		
Max. external capacitance	C <sub>o</sub> = 32uF	
for max. external inductance	L <sub>o</sub> = 3uH	
or		
Max. external capacitance	C <sub>o</sub> = 25uF	
for max. external inductance	L <sub>o</sub> = 4 uH	
or		
Max. external capacitance	C <sub>o</sub> = 21uF	
for max. external inductance	L <sub>o</sub> = 5uH	
<b>Terminal block X9</b>		
<p>For connection of passive intrinsically safe apparatus e.g., a power button.                      For each terminal blocks X9 (BTN - Power Button)                      Terminals 1(+), 2(GND).</p>		
Max. output voltage	U <sub>o</sub> = 5.36V DC	
Max. output current	I <sub>o</sub> = 45mA	
Max. output power	P <sub>o</sub> = 0.061W	
Linear output characteristics		
Max. external capacitance	C <sub>o</sub> = 64uF	
For max. external inductance	L <sub>o</sub> = 0.89uH	
or		
Max. external capacitance	C <sub>o</sub> = 20uF	
For max. external inductance	L <sub>o</sub> = 3.89uH	



## IECEX Certificate of Conformity

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Certificate No.: **IECEX UL 23.0007X**

Issue No.: 0

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**Terminal blocks X7 and X8**

For connection of passive intrinsically safe apparatus e.g., USB-Stick  
 For each terminal blocks X7 (USB6) and X8 (USB6):  
 Terminals 1(+), 2(D-), 3(D+), 4(GND).

Max. output voltage	U <sub>o</sub> = 5.54V DC
Max. output current	I <sub>o</sub> = 757mA
Max. output power	P <sub>o</sub> = 3.9W
Max. external capacitance	C <sub>o</sub> = 48.6uF
for max. external inductance	L <sub>o</sub> = 1uH
or	
Max. external capacitance	C <sub>o</sub> = 33.6uF
for max. external inductance	L <sub>o</sub> = 2uH
or	
Max. external capacitance	C <sub>o</sub> = 21.6uF
for max. external inductance	L <sub>o</sub> = 3uH
or	
Max. external capacitance	C <sub>o</sub> = 15.6uF
for max. external inductance	L <sub>o</sub> = 4 uH
or	
Max. external capacitance	C <sub>o</sub> = 11.6uF
for max. external inductance	L <sub>o</sub> = 5uH





## 4 Indian certificates

### 4.1 BIS



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

**BUREAU OF INDIAN STANDARDS**

(Ministry of Consumer Affairs, Food & Public Distribution,  
Govt. of India)


मानक भवन, 9 बहादुर शाह जफर मार्ग, नई दिल्ली - 110002  
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi - 110002  
दूरभाष/Phone: +91-11-23230856/2323010131/23233375/23239402  
ई-मेल/E-mail: registration@bis.gov.in  
वेबसाइट/Website: <https://bis.gov.in/>, <https://www.crsbis.in/BIS/>

Our Ref: REGISTRATION/CRS 2022-2596/R-41228087

Date:23-04-2024

**Inclusion Id: 80459**

**Subject :Inclusion of Additional Model(s)**

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	
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Dear Sir,

1. This has reference to your request for inclusion of models of "Automatic Data Processing Machine" as per IS 13252(Part 1):2010/ IEC 60950-1 : 2005 in Licence No. **R-41228087** already granted to you which is valid upto 26-06-2026.

2. It is intimated that the additional Models as per details given below have been agreed to be included in your scope of Licence. **R-41228087 w.e.f. 23-04-2024:**

Product Category	Automatic Data Processing Machine
Product Name	ALL IN ONE PC (ADPM)
IS No.	IS 13252(Part 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer):	STAHL
Inclusion of Additional Models (w.e.f. 23-04-2024)	[Brand -> STAHL, Models -> ORCA01ETCS3DC0000, ORCA01ETCS4DC0000, ORCA01ETCS6DC0000]
Factory Address	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

3. Other terms and conditions of the licence shall remain same.

4. This letter is being issued with the approval of competent authority.

Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,  
(Sonali Gupta)  
Scientist-B  
Telfax : +91-11-23230856  
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.  
To verify authentication of letter, kindly scan the QR code on this letter.

For details information on BIS, consult the e-BIS Portal ([www.manakonline.in](http://www.manakonline.in)).  
Please use BIS CARE APP for verification of ISI-marked goods and hallmarked gold jewellery.





**भारतीय मानक ब्यूरो**  
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)  
**BUREAU OF INDIAN STANDARDS**  
(Ministry of Consumer Affairs, Food & Public Distribution,  
Govt. of India)

मानक भवन, 9 बहादुर शाह जफर मार्ग, नई दिल्ली - 110002  
Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi - 110002  
दूरभाष/Phone: +91-11-23230856/2323010131/23233375/23239402  
ई-मेल/E-mail: registration@bis.gov.in  
वेबसाइट/Website: <https://bis.gov.in/>, <https://www.crsbis.in/BIS/>

Our Ref: REGISTRATION/CRS 2022-2596/R-41228087

Date:08-04-2024

**Inclusion Id: 80165**

**Subject :Inclusion of Additional Model(s)**

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	
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Dear Sir,

1. This has reference to your request for inclusion of models of "**Automatic Data Processing Machine**" as per IS 13252(Part 1):2010/ IEC 60950-1 : 2005 in Licence No. **R-41228087** already granted to you which is valid upto 26-06-2026.

2. It is intimated that the additional Models as per details given below have been agreed to be included in your scope of Licence. **R-41228087 w.e.f. 08-04-2024:**

Product Category	Automatic Data Processing Machine
Product Name	ALL IN ONE PC (ADPM)
IS No.	IS 13252(Part 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer):	STAHL
Inclusion of Additional Models (w.e.f. <b>08-04-2024</b> )	[Brand -> STAHL, Models -> ORCA01ETCP4DC0000, ORCA01ETCP4DCMM00, ORCA01ETCP6DC0000, ORCA01ETCP6DCMM00, ORCA01ETCP6DCMMS, ORCA01ETCP6DCSM00, ORCA01ETCP6DCSMCS]
Factory Address	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

3. Other terms and conditions of the licence shall remain same.

4. This letter is being issued with the approval of competent authority.

Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,  
(Deepti Budiyal)  
Granting Authority  
Telfax : +91-11-23230856  
E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.  
To verify authentication of letter, kindly scan the QR code on this letter.

For details information on BIS, consult the e-BIS Portal ([www.manakonline.in](http://www.manakonline.in)).  
Please use BIS CARE APP for verification of ISI-marked goods and hallmarked gold jewellery.



**भारतीय मानक ब्यूरो**  
 (उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)  
**BUREAU OF INDIAN STANDARDS**  
 (Ministry of Consumer Affairs, Food & Public Distribution,  
 Govt. of India)


मानक भवन, 9 बहादुर शाह जफर मार्ग, नई दिल्ली - 110002  
 Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi - 110002  
 दूरभाष / Phone: +91-11-23230856/2323010131/23233375/23239402  
 ई-मेल / E-mail: registration@bis.gov.in  
 वेबसाइट / Website: <https://bis.gov.in/>, <https://www.crsbis.in/BIS/>

Our Ref: REGISTRATION/CRS 2022-2596/R-41228087

Date:25-04-2024

**Inclusion Id: 80687**

**Subject :Inclusion of Additional Model(s)**

MANUFACTURING UNIT :	R.Stahl Hmi Systems Gmbh ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829 office@stahl-hmi.de 49221768061000	
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Dear Sir,

1. This has reference to your request for inclusion of models of "Automatic Data Processing Machine" as per IS 13252(Part 1):2010/ IEC 60950-1 : 2005 in Licence No. **R-41228087** already granted to you which is valid upto 26-06-2026.

2. It is intimated that the additional Models as per details given below have been agreed to be included in your scope of Licence. **R-41228087 w.e.f. 25-04-2024:**

Product Category	Automatic Data Processing Machine
Product Name	ALL IN ONE PC (ADPM)
IS No.	IS 13252(Part 1):2010/ IEC 60950-1 : 2005
Brand (As Declared by Manufacturer):	STAHL
Inclusion of Additional Models (w.e.f. 25-04-2024)	[Brand -> STAHL, Models -> ORCA01ETCP4AC0000, ORCA01ETCP4ACMM00, ORCA01ETCP6AC0000, ORCA01ETCP6ACMM00, ORCA01ETCP6ACMMC8, ORCA01ETCP6ACSM00, ORCA01ETCP6ACSMC8]
Factory Address	ADOLF-GRIMME-ALLEE 8, 50829 COLOGNE COLOGNE,Germany-50829

3. Other terms and conditions of the licence shall remain same.

4. This letter is being issued with the approval of competent authority.

Kindly acknowledge receipt of this letter.

Thanking you,

Yours faithfully,  
 (Avik Datta)  
 Scientist-D  
 Telfax : +91-11-23230856  
 E-mail: registration@bis.gov.in

Note: This is a system generated letter. Hence signature is not required.  
 To verify authentication of letter, kindly scan the QR code on this letter.

For details information on BIS, consult the e-BIS Portal ([www.manakonline.in](http://www.manakonline.in)).  
 Please use BIS CARE APP for verification of ISI-marked goods and hallmarked gold jewellery.

4.2 PESO



Government of India  
 Ministry of Commerce & Industry  
 Petroleum & Explosives Safety Organisation (PESO)  
 5th Floor, A-Block, CGO Complex, Seminary Hills,  
 Nagpur - 440006

E-mail : [explosives@explosives.gov.in](mailto:explosives@explosives.gov.in)  
 Phone/Fax No : 0712 -2510248, Fax-2510577

Approval No : A/P/HQ/TN/104/6403 (P572175)

Dated : 28/08/2023

To,  
 M/s. R. STAHL HMI Systems GmbH,  
 Adolf Grimme Allee 8,Köln  
 50829  
 GERMANY

Sub : Approval of Intrinsically Safe, Sand Filled, Increased Safety Type Electrical Equipment. under Petroleum Rules 2002- Regarding.  
 Sir(s),

Please refer to your letter No. OIN1424688 dated 22/08/2023 on the subject.  
 The following Ex electrical equipment(s) manufactured by you according to IEC 60079-0 : 2017, IEC 60079-11 : 2011, IEC 60079-5 : 2022, IEC 60079-7 : 2017, standards and covered under UL LLC Test reports mentioned below is/are approved for use in Zone 1 of Gas IIC hazardous areas coming under the the Petroleum Rules, 2002 administered by this Organization.

Sr. No	Description	Safety Protection	Equipment reference Number	Test Agency			Drawing no
				Name	Certificate No.	Certificate Date	
1	Operator Terminals, HMI Series ORCA01E...	Ex eb ib qb [ib] [ja Ga] IIC T4 Gb	P572175/1	UL LLC	IECEX UL 23.0007X Issue No 0	04/04/2023	As per test report.

This Approval is granted subject to observance of the following conditions:-

- 1)The design and construction of the equipment shall be strictly in accordance with description, condition and drawings as mentioned in the UL LLC Test Reports referred to above.
- 2)The equipment shall be used only with approved type of accessories and associated apparatus.
- 3)Each equipment shall be marked either by raised lettering cast integrally or by plate attached permanently to the main structure to indicate conspicuously:-
  - (a) Name of the manufacturer
  - (b) Name and number by which the equipment is identified.
  - (c) Number & date of the test report of the UL LLC applicable to the equipment.
  - (d) Equipment reference number of this letter by which use of apparatus is approved.
  - (e) Protection level.
- 4) A certificate to the effect that the equipment has been manufactured strictly in accordance with the drawing referred to in the UL LLC Test report and is identical with the one tested and certified at UL LLC shall be furnished with each equipment.
- 5) The customer shall be supplied with a copy of this letter, an extract of the conditions and maintenance schedule, if any, recommended by UL LLC in their test reports and copy of instructions booklet detailing operation & maintenance of the equipment so as to maintain its Flame Proof characteristics.
- 6) The After sales service and maintenance of subject equipment shall be looked after by your representative R.STAHL PRIVATE LIMITED, Plot No. 5 Malrosapuram Main Road Sengundram Indl Area

This approval also covers the permissible variations as approved under the UL LLC test reports referred above. This approval is liable to be cancelled if any of the conditions of the approval is violated or not complied with . The approval may also be amended or withdrawn at any time, if considered necessary in the interest of safety.

The field performance report from actual users/your customers of the subject equipment may please be collected and furnished to this office for verification and record on annual basis. The Approval is Valid upto 31/12/2027

Yours faithfully,

(K. Thiagarajan)  
 Jt. Chief Controller of Explosives  
 For Chief Controller of Explosives  
 Nagpur

Copy to :  
 1. Jt. Chief Controller of Explosives, South Circle Office, CHENNAI  
 2. R.STAHL PRIVATE LIMITED,Plot No. 5 Malrosapuram Main Road Sengundram Indl Area

for Chief Controller of Explosives  
 Nagpur

(For more information regarding status,fees and other details please visit our website <http://peso.gov.in>)

**This is System Generated document. Signature is not required.**

Digitally signed by K THIAGARAJAN  
 Reason: Approval No. : A/P/HQ/TN/104/6403  
 Location:Nagpur [P572175]  
 Date:28-08-2023 11:22:21 AM

# 5 CNEx certificate

## 5.1 ORCA01E\*

### 5.1.1 English version



Certificate number: CNEx24.2504X

# 防爆合格证

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

**Manufacturer** R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8, 50829 Köln, Germany

**Product** Operator Terminals

**Type** ORCA01Eccdeffgghh\*

**Marking** Ex eb ib qb [ib] [ia Ga] IIC T4 Gb, Ex tb [ib] [ia Da] IIIC T115°C Db

**Standard(s)** --

**Drawing No.** 10608625, 10608624, 10608623, 10608622, 10608621

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

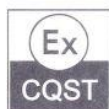
- GB/T3836.1-2021 Explosive atmospheres - Part 1: Equipment - General requirements
- GB/T 3836.3-2021 Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
- GB/T 3836.4-2021 Explosive atmospheres - Part 4: Equipment protection by intrinsic safety "i"
- GB/T 3836.7-2021 Explosive atmospheres - Part 7: Equipment protection by powder filling "q"
- GB/T3836.31-2021 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Note:  
See Annex (8 pages in total).

Director

Date:

Valid until:



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Certificate number: CNEx24.2504X

# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 1 of 8

1. This product has been IECEx certified, certificate No. IECEx UL 23.0007X, issue 0, dated on 2023-04-04.

2. Nomenclature:

ORCA	01	E	cc	d	e	ff
	a	b	cc	d	e	ff

a: 01= Revision 01

b: E=Zone 1 / 21 (EPL Gb / Db)

cc: Technology

00=None+

TC=Technology Thin Client / Panel PC

DM=Technology Direct Monitor

d: E-Box

0=None+

S=Standard

P=Pro

e: D-Box

0=None+

3=Size 3

4=Size 4

6=Size 6

ff: Power

00=None+

AC=AC Power

DC=DC Power

gg: Fiber Optic

00=None

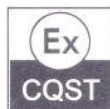
MM=MM

SM=SM

Director

Date: 2024-06-12

Valid until: 2029-06-11



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Certificate number: CNEx24.2504X

# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres

### CERTIFICATE OF CONFORMITY

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hh: RFID  
 00=None  
 C5=RFID Crypt  
 C6=RFID ASC  
 C8=RFID PC-SC

\*: any alphanumeric or symbolic characters, without relevance for explosion protection  
 + Note – ORCA is a combination of an E-Box and D-Box that are only certified together. Each D-Box and E-Box has their own nomenclature configuration depending on options included and both the D-Box and E-Box nomenclature is included on the label drawing. When option “0” or “00” is selected as noted by the “+”, this indicates that the option is not a part of the respective D-Box or the E-Box configuration.

3. Electrical Data:

Non-intrinsically safe circuits:

Terminal block X1 POWER  
 Non-intrinsically safe supply circuits (Power)  
 Nominal voltage  
     For DC version (ORCA01EccdeDCgghh\*) ,  
         24VDC (19.2...31.2VDC)  
     For AC version (ORCA01EccdeACgghh\*) ,  
         100/230VAC (85...250VAC) (47...63Hz)  
 Nominal current  
     For DC version (ORCA01EccPeDCgghh\*) , Imax≤6.3A, Inom=4.2A  
     For DC version (ORCA01EccSeDCgghh\*) , Imax≤4A, Inom=2.7A  
     For AC version (ORCA01EccPeACgghh\*) , Imax≤2A, Inom=1.4A  
 Nominal power: Pnom≤150W  
 Max. input voltage: Um=250VAC

Director

Date:

2024-06-12

Valid until:

2029-06-11



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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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Terminal block X2 Non-intrinsically safe circuits X2 (LAN 0) and Nominal voltage: Unom=5VAC/DC Max. input voltage: Um=30VDC
Terminal block X3 Non-intrinsically safe circuits X3 (USB 0) Nominal voltage: Unom=5VAC/DC Max. input voltage: Um=30VAC
Terminal block X4 Non-intrinsically safe circuits X4 (SERIAL) Nominal voltage: Unom=12VAC/DC Max. input voltage: Um=30VAC
Terminal block X10 This interface exist optionally in ORCA01EccPeffgghh*, In case of Cooper LAN 1 interface: Non-intrinsically safe circuits X10 Nominal voltage: Unom=5VAC/DC Max. input voltage: Um=30VDC
Terminal block X11 This interface exist optionally in ORCA01EccPeffgghh*, Non-intrinsically safe circuits X11 (USB 3) Nominal voltage: Unom=5VAC/DC Max. input voltage: Um=30VAC

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres

### CERTIFICATE OF CONFORMITY

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<p>Terminal block X12</p> <p>This interface exist optionally in ORCA01EccPeffgghh*.</p> <p>This interface can exist according to the option with one of the following configurations:</p> <p>In case of AUDIO interface:</p> <p>Non-intrinsically safe circuits X12 (AUDIO)</p> <p>Nominal voltage: Unom=12VAC/DC</p> <p>Max. input voltage: Um=30VDC</p> <p>For passive apparatus only.</p> <p>In case of USB 2 interface:</p> <p>Non-intrinsically safe circuits X12 (USB)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p>Terminal block X13</p> <p>This interface exist optionally in ORCA01EccPeffgghh* ,</p> <p>Non-intrinsically safe circuits X13 (USB 3)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p>Terminal block X14 Service Port</p> <p>This port is not allowed to be used.</p> <p>It is restricted to internal and service use and only in safe and secure areas!</p>

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres

### CERTIFICATE OF CONFORMITY

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Terminal blocks X15 and X16

These interfaces exist optionally in ORCA01EccPeffggh\*,

In case of Optical fiber X15-LAN1-FO and X16-LAN2-FO interface:

Optical radiation sources for use in EPL Gb or Gc and Db or Dc applications which comply with Class 1 limits in accordance with GB 7247.1 is used.

Intrinsically safe circuits (level of protection Ex ia IIC resp. Ex ia IIIC):

Terminal blocks X5 and X6

For connection of passive intrinsically safe apparatus e.g., keyboard and mouse.

For each terminal blocks X5 (USB4) and X6 (USB5):

Terminals 1(+), 2(D-), 3(D+), 4(GND).

Max. output voltage:  $U_o=5.36VDC$ ; Max. output current:  $I_o=249mA$

Max. output power:  $P_o=0.341W$ ; Max. external capacitance:  $C_o=65\mu F$

for max. external inductance:  $L_o=1\mu H$

or

Max. external capacitance:  $C_o=46\mu F$ ; for max. external inductance:  $L_o=2\mu H$

or

Max. external capacitance:  $C_o=32\mu F$ ; for max. external inductance:  $L_o=3\mu H$

or

Max. external capacitance:  $C_o=25\mu F$ ; for max. external inductance:  $L_o=4\mu H$

or

Max. external capacitance:  $C_o=21\mu F$ ; for max. external inductance:  $L_o=5\mu H$

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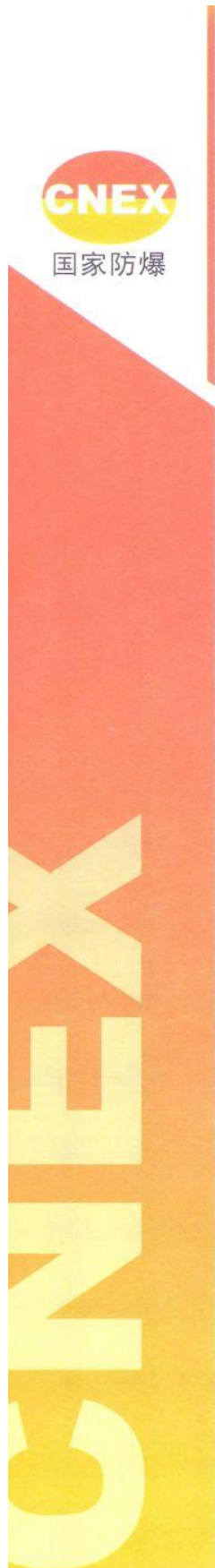
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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres

### CERTIFICATE OF CONFORMITY

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Terminal block X9

For connection of passive intrinsically safe apparatus e.g., a power button.

For each terminal blocks X9 (BTN - Power Button)

Terminals 1(+), 2(GND):

Max. output voltage:  $U_o=5.36VDC$

Max. output current:  $I_o=45mA$

Max. output power:  $P_o=0.061W$

Linear output characteristics

Max. external capacitance:  $C_o=64\mu F$

for max. external inductance:  $L_o=0.89\mu H$

or

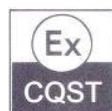
Max. external capacitance:  $C_o=20\mu F$

for max. external inductance:  $L_o=3.89\mu H$

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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Intrinsically safe circuits (level of protection Ex ib IIC resp. Ex ib IIIC):

Terminal blocks X7 and X8

For connection of passive intrinsically safe apparatus e.g., USB-Stick

For each terminal blocks X7 (USB6) and X8 (USB6):

Terminals 1(+), 2(D-), 3(D+), 4(GND).

Max. output voltage:  $U_o=5.54VDC$ ; Max. output current:  $I_o=757mA$

Max. output power:  $P_o=3.9W$ ; Max. external capacitance:  $C_o=48.6\mu F$

for max. external inductance:  $L_o=1\mu H$

or

Max. external capacitance:  $C_o=33.6\mu F$ ; for max. external inductance:  $L_o=2\mu H$

or

Max. external capacitance:  $C_o=21.6\mu F$ ; for max. external inductance:  $L_o=3\mu H$

or

Max. external capacitance:  $C_o=15.6\mu F$ ; for max. external inductance:  $L_o=4\mu H$

or

Max. external capacitance:  $C_o=11.6\mu F$ ; for max. external inductance:  $L_o=5\mu H$

Director

Date: 2024-06-12

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres

### CERTIFICATE OF CONFORMITY

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- 4. Ingress Protection: IP65.
- 5. Specific conditions of use:
  - Ambient temperature: -20°C~+55°C.
  - WARNING - Potential electrostatic charging hazard - Clean only with a damp cloth! See instructions.
  - The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
  - The intrinsically safe circuits are connected to earth. Along the intrinsically safe circuits, potential equalization must exist or the intrinsically safe apparatus connected must meet the 500 V r.m.s dielectric strength test between circuit and the frame.
  - Maximum over voltage category II according to GB/T16935.1 is permitted for the non-intrinsically safe circuits.
  - Before application, certified cable gland that suitable for the conditions of use and/or stopping plug shall be applied, and correctly installed.

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## 5.1.2 Chinese version



编号: CNEx24.2504X

## 防爆合格证

制造单位 R. STAHL HMI Systems GmbH  
 Adolf-Grimme-Allee 8, 50829 Köln, Germany

产品名称 操作终端

型号规格 ORCA01Eccdeffgghh\*

防爆标志 Ex eb ib qb [ib] [ia Ga] IIC T4 Gb, Ex tb [ib] [ia Da] IIIC T115°C Db

产品标准 --

总装图号 10608625, 10608624, 10608623, 10608622, 10608621

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准:

GB/T 3836.1-2021 《爆炸性环境 第1部分:设备 通用要求》  
 GB/T 3836.3-2021 《爆炸性环境 第3部分:由增安型“e”保护的的设备》  
 GB/T 3836.4-2021 《爆炸性环境 第4部分:由本质安全型“i”保护的的设备》  
 GB/T 3836.7-2017 《爆炸性环境 第7部分:由充砂型“q”保护的的设备》  
 GB/T 3836.31-2021 《爆炸性环境 第31部分:由防粉尘点燃外壳“t”保护的的设备》

记事:见附页(共8页)。

中心主任

颁发日期 2024年06月12日

本证有效期 2024年06月12日至2029年06月11日



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国家防爆

编号: CNEx24.2504X

# 防爆合格证 (附页)

共 8 页 第 1 页

1. 本产品已取得 IECEx 认证, 证书号: IECEx UL 23.0007X, issue0, 2023-04-04 颁发。

2. 命名规则

ORCA	01	E	cc	d	e	ff	gg	hh	*
	a	b	cc	d	e	ff	gg	hh	*

- a: 01=版本 01
- b: E=用于 1/21 区 (EPL Gb/Db)
- cc: 运用的技术  
00=无+  
TC=轻薄客户端/平板电脑  
DM=直接监控技术
- d: E-Box  
0=无+  
S=标准版  
P=专业版
- e: D-Box  
0=无+  
3=尺寸 3  
4=尺寸 4  
6=尺寸 6
- ff: 电源  
00=无+  
AC=交流电源  
DC=直流电源
- gg: 光纤选项  
00=无  
MM=MM  
SM=SM

中心主任

颁发日期

2024年06月12日

本证有效期

2024年06月12日至2029年06月11日



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国家防爆

编号：CNEx24.2504X

# 防爆合格证 (附页)

共 8 页 第 2 页

- hh: RFID
- 00=无
- C5=RFID Crypt
- C6=RFID ASC
- C8=RFID PC-SC

\*: 与防爆无关的数字或字母

+ : 注意：ORCA 是 E-Box 和 D-Box 的组合，只能一起认证。每个 D-Box 和 E-Box 都有自己的命名配置，具体取决于所包含的选项，并且 D-Box 和 E-Box 命名法都包含在标签图上。当选择选项“0”或“00”时，如“+”所示，这表示该选项不是相应 D-Box 或 E-Box 配置的一部分。

### 3. 电气参数:

非本安电路:

接线端子 X1 非本安供电电路 (电源) 额定电压 对于 DC 版本 (ORCA01EccdeDCgghh*), 24VDC (19.2...31.2VDC) 对于 AC 版本 (ORCA01EccdeACgghh*), 100/230VAC (85...250VAC) (47...63Hz) 额定电流: 对于 DC 版本 (ORCA01EccPeDCgghh*), $I_{max} \leq 6.3A$ , $I_{nom} = 4.2A$ 对于 DC 版本 (ORCA01EccSeDCgghh*), $I_{max} \leq 4A$ , $I_{nom} = 2.7A$ 对于 AC 版本 (ORCA01EccPeACgghh*), $I_{max} \leq 2A$ , $I_{nom} = 1.4A$ 额定功率: $P_{nom} \leq 150W$ 最高输入电压: $U_m = 250VAC$
接线端子 X2 非本安电路 X2 (LAN 0) 额定电压: $U_{nom} = 5VAC/DC$ 最高输入电压: $U_m = 30VDC$

中心主任

颁发日期

2024年06月12日

本证有效期

2024年06月12日至2029年06月11日



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国家防爆

编号: CNEx24.2504X

# 防爆合格证 (附页)

共 8 页 第 3 页

接线端子 X3 非本安电路 X3 (USB 0) 额定电压: $U_{nom}=5VAC/DC$ 最高输入电压: $U_m=30VAC$
接线端子 X4 非本安电路 X4 (SERIAL) 额定电压: $U_{nom}=12VAC/DC$ 最高输入电压: $U_m=30VAC$
接线端子 X10 该接口仅存在 (可选) 于 ORCA01EccPeffggh*中, Cooper LAN 1 接口: 非本安电路 X10 额定电压: $U_{nom}=5VAC/DC$ 最高输入电压: $U_m=30VDC$
接线端子 X11 该接口仅存在 (可选) 于 ORCA01EccPeffggh*中, 非本安电路 X11 (USB3) 额定电压: $U_{nom}=5VAC/DC$ 最高输入电压: $U_m=30VAC$

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# 防爆合格证 (附页)

共 8 页 第 4 页

<p>接线端子 X12</p> <p>该接口仅存在 (可选) 于 ORCA01EccPeffgghh* 中, 该接口可选以下配置之一:</p> <p>AUDIO 接口:</p> <p>非本安电路 X12 (AUDIO)</p> <p>额定电压: <math>U_{nom}=12VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p> <p>仅适用于无源设备</p> <p>USB 2 接口:</p> <p>非本安电路 X12 (USB)</p> <p>额定电压: <math>U_{nom}=5VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p>
<p>接线端子 X13</p> <p>该接口仅存在 (可选) 于 ORCA01EccPeffgghh* 中,</p> <p>非本安电路 X13 (USB3)</p> <p>额定电压: <math>U_{nom}=5VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p>
<p>接线端子 X14 服务端口</p> <p>不允许使用此端口。它仅限于内部服务使用, 并且只能在安全区使用!</p>
<p>接线端子 X15 和 X16</p> <p>该接口仅存在 (可选) 于 ORCA01EccPeffgghh* 中,</p> <p>光纤 X15-LAN1-FO 和 X16-LAN2-FO 接口:</p> <p>仅适用于符合 GB 7247.1 中的 1 类限值且用于 EPL Gb 或 Gc 和 Db 或 Dc 的光纤光源。</p>

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# 防爆合格证 (附页)

共 8 页 第 5 页

本安电路 ( Ex ia IIC 或 Ex ia IIIC ) :

接线端子 X5 和 X6  
 用于连接无源本安设备, 如键盘和鼠标。  
 接线端子 X5 (USB4) 和 X6 (USB5) :  
 端子 1 (+), 2 (D-), 3 (D+), 4 (GND)  
 最高输出电压:  $U_0=5.36VDC$   
 最大输出电流:  $I_0=249mA$   
 最大输出功率:  $P_0=0.341W$   
 最大外部电容:  $C_0=65\mu F$   
 最大外部电感:  $L_0=1\mu H$   
 或  
 最大外部电容:  $C_0=46\mu F$   
 最大外部电感:  $L_0=2\mu H$   
 或  
 最大外部电容:  $C_0=32\mu F$   
 最大外部电感:  $L_0=3\mu H$   
 或  
 最大外部电容:  $C_0=25\mu F$   
 最大外部电感:  $L_0=4\mu H$   
 或  
 最大外部电容:  $C_0=21\mu F$   
 最大外部电感:  $L_0=5\mu H$

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国家防爆

编号: CNEx24.2504X

# 防爆合格证 (附页)

共 8 页 第 6 页

接线端子 X9  
 用于连接无源本安设备, 如电源按钮。  
 接线端子 X9 (BTN - Power Button)  
 端子 1 (+), 2 (GND)  
 最高输出电压:  $U_o=5.36VDC$   
 最大输出电流:  $I_o=45mA$   
 最大输出功率:  $P_o=0.061W$   
 线性输出特性  
 最大外部电容:  $C_o=64\mu F$   
 最大外部电感:  $L_o=0.89\mu H$   
 或  
 最大外部电容:  $C_o=20\mu F$   
 最大外部电感:  $L_o=3.89\mu H$

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# 防爆合格证 (附页)

共 8 页 第 7 页

本安电路 (Ex ib IIC 或 Ex ib IIIC):

接线端子 X7 和 X8

用于连接无源本安设备, 如 U 盘。

接线端子 X7 (USB6) 和 X8 (USB6):

端子 1 (+), 2 (D-), 3 (D+), 4 (GND)

最高输出电压:  $U_o=5.54VDC$

最大输出电流:  $I_o=757mA$

最大输出功率:  $P_o=3.9W$

最大外部电容:  $C_o=48.6\mu F$

最大外部电感:  $L_o=1\mu H$

或

最大外部电容:  $C_o=33.6\mu F$

最大外部电感:  $L_o=2\mu H$

或

最大外部电容:  $C_o=21.6\mu F$

最大外部电感:  $L_o=3\mu H$

或

最大外部电容:  $C_o=15.6\mu F$

最大外部电感:  $L_o=4\mu H$

或

最大外部电容:  $C_o=11.6\mu F$

最大外部电感:  $L_o=5\mu H$

中心主任

*王军*

颁发日期

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## 防爆合格证 (附页)

共 8 页 第 8 页

4. 外壳防护等级: IP65。
5. 特殊使用条件:
- 1) 使用环境温度:  $-20^{\circ}\text{C}\sim+55^{\circ}\text{C}$ 。
  - 2) 警告-潜在静电电荷危险, 请仅用湿布擦拭外壳表面, 见产品使用说明书。
  - 3) 本产品 (包括连接电缆) 只能安装在不存在密集静电充电工艺过程的区域。
  - 4) 本安电路接地。沿本安电路, 必须有等电位连接, 或者所连接的本安设备必须满足电路与地之间 500 V r.m.s 的介电强度测试。
  - 5) 根据 GB/T16935.1, 非本安电路允许的最大过电压类别为 II 类。
  - 6) 本产品安装使用时, 应配备已取得防爆合格证且适合使用条件的电缆引入装置和/或堵头, 并正确安装。

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5.2 ORCA01M\*

5.2.1 English version



Certificate number: CNEx24.2503X

# 防爆合格证

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

**Manufacturer** R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8, 50829 Köln, Germany

**Product** Operator Terminals

**Type** ORCA01Mccdeffggh\*

**Marking** Ex ec ib qb [ib] [ia Ga] IIC T4 Gc, Ex tc [ib] [ia Da] IIIC T115°C Dc

**Standard(s)** --

**Drawing No.** 10608625, 10608624, 10608623, 10608622, 10608621

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

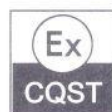
- GB/T3836.1-2021 Explosive atmospheres - Part 1: Equipment - General requirements
- GB/T 3836.3-2021 Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
- GB/T 3836.4-2021 Explosive atmospheres - Part 4: Equipment protection by intrinsic safety "i"
- GB/T 3836.7-2021 Explosive atmospheres - Part 7: Equipment protection by powder filling "q"
- GB/T3836.31-2021 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

**Note:**  
See Annex (8 pages in total).

Director

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 1 of 8

1. This product has been IECEx certified, certificate No. IECEx UL 23.0007X, issue 0, dated on 2023-04-04.

2. Nomenclature:

ORCA	01	M	cc	d	e	ff
	a	b	cc	d	e	ff

- a: 01= Revision 01
- b: Zone 2 / 22 (EPL Gc / Dc)
- cc: Technology
  - 00=None+
  - TC=Technology Thin Client / Panel PC
  - DM=Technology Direct Monitor
- d: E-Box
  - 0=None+
  - S=Standard
  - P=Pro
- e: D-Box
  - 0=None+
  - 3=Size 3
  - 4=Size 4
  - 6=Size 6
- ff: Power
  - 00=None+
  - AC=AC Power
  - DC=DC Power
- gg: Fiber Optic
  - 00=None
  - MM=MM
  - SM=SM

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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- hh: RFID
- 00=None
- C5=RFID Crypt
- C6=RFID ASC
- C8=RFID PC-SC

\*: any alphanumeric or symbolic characters, without relevance for explosion protection  
 + Note – ORCA is a combination of an E-Box and D-Box that are only certified together. Each D-Box and E-Box has their own nomenclature configuration depending on options included and both the D-Box and E-Box nomenclature is included on the label drawing. When option "0" or "00" is selected as noted by the "+", this indicates that the option is not a part of the respective D-Box or the E-Box configuration.

3. Electrical Data:

Non-intrinsically safe circuits:

Terminal block X1 POWER
Non-intrinsically safe supply circuits (Power)
Nominal voltage
For DC version (ORCA01MccdeDCgghh*) ,
24VDC (19.2...31.2VDC)
For AC version (ORCA01MccdeACgghh*) ,
100/230VAC (85...250VAC) (47...63Hz)
Nominal current
For DC version (ORCA01MccPeDCgghh*) , I <sub>max</sub> ≤6.3A, I <sub>nom</sub> =4.2A
For DC version (ORCA01MccSeDCgghh*) , I <sub>max</sub> ≤4A, I <sub>nom</sub> =2.7A
For AC version (ORCA01MccPeACgghh*) , I <sub>max</sub> ≤2A, I <sub>nom</sub> =1.4A
Nominal power: P <sub>nom</sub> ≤150W
Max. input voltage: U <sub>m</sub> =250VAC

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 3 of 8

<p>Terminal block X2</p> <p>Non-intrinsically safe circuits X2 (LAN 0) and</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VDC</p>
<p>Terminal block X3</p> <p>Non-intrinsically safe circuits X3 (USB 0)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p>Terminal block X4</p> <p>Non-intrinsically safe circuits X4 (SERIAL)</p> <p>Nominal voltage: Unom=12VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p>Terminal block X10</p> <p>This interface exist optionally in ORCA01MccPeffgghh* ,</p> <p>In case of Cooper LAN 1 interface:</p> <p>Non-intrinsically safe circuits X10</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VDC</p>
<p>Terminal block X11</p> <p>This interface exist optionally in ORCA01MccPeffgghh* ,</p> <p>Non-intrinsically safe circuits X11 (USB 3)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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<p><b>Terminal block X12</b></p> <p>This interface exist optionally in ORCA01MccPeffgghh*.</p> <p>This interface can exist according to the option with one of the following configurations:</p> <p>In case of AUDIO interface:</p> <p>Non-intrinsically safe circuits X12 (AUDIO)</p> <p>Nominal voltage: Unom=12VAC/DC</p> <p>Max. input voltage: Um=30VDC</p> <p>For passive apparatus only.</p> <p>In case of USB 2 interface:</p> <p>Non-intrinsically safe circuits X12 (USB)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p><b>Terminal block X13</b></p> <p>This interface exist optionally in ORCA01MccPeffgghh*.</p> <p>Non-intrinsically safe circuits X13 (USB 3)</p> <p>Nominal voltage: Unom=5VAC/DC</p> <p>Max. input voltage: Um=30VAC</p>
<p><b>Terminal block X14 Service Port</b></p> <p>This port is not allowed to be used.</p> <p>It is restricted to internal and service use and only in safe and secure areas!</p>

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Certificate number: CNEx24.2503X

# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY



Page 5 of 8

Terminal blocks X15 and X16

These interfaces exist optionally in ORCA01MccPeffgghh\* ,

In case of Optical fiber X15-LAN1-FO and X16-LAN2-FO interface:

Optical radiation sources for use in EPL Gb or Gc and Db or Dc applications which comply with Class 1 limits in accordance with GB 7247.1 is used.

Intrinsically safe circuits (level of protection Ex ia IIC resp. Ex ia IIIC):

Terminal blocks X5 and X6

For connection of passive intrinsically safe apparatus e.g., keyboard and mouse.

For each terminal blocks X5 (USB4) and X6 (USB5):

Terminals 1(+), 2(D-), 3(D+), 4(GND).

Max. output voltage:  $U_o=5.36VDC$ ; Max. output current:  $I_o=249mA$

Max. output power:  $P_o=0.341W$ ; Max. external capacitance:  $C_o=65\mu F$

for max. external inductance:  $L_o=1\mu H$

or

Max. external capacitance:  $C_o=46\mu F$ ; for max. external inductance:  $L_o=2\mu H$

or

Max. external capacitance:  $C_o=32\mu F$ ; for max. external inductance:  $L_o=3\mu H$

or

Max. external capacitance:  $C_o=25\mu F$ ; for max. external inductance:  $L_o=4\mu H$

or

Max. external capacitance:  $C_o=21\mu F$ ; for max. external inductance:  $L_o=5\mu H$

Director

Date: 2024-06-12

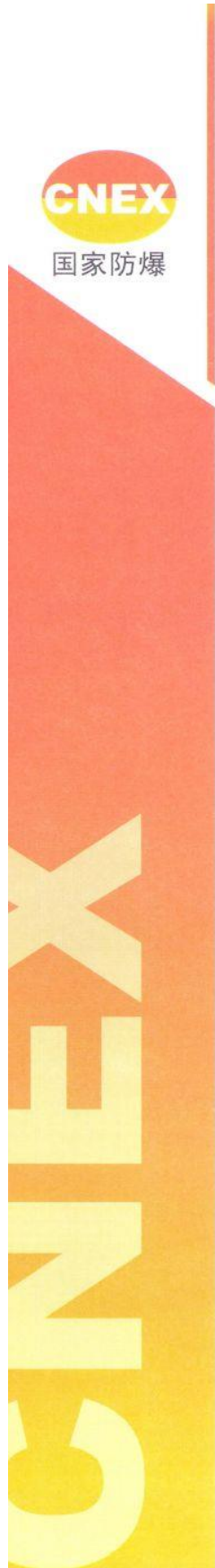
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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 6 of 8

Terminal block X9

For connection of passive intrinsically safe apparatus e.g., a power button.

For each terminal blocks X9 (BTN - Power Button)

Terminals 1(+), 2(GND).

Max. output voltage:  $U_o=5.36VDC$

Max. output current:  $I_o=45mA$

Max. output power:  $P_o=0.061W$

Linear output characteristics

Max. external capacitance:  $C_o=64\mu F$

for max. external inductance:  $L_o=0.89\mu H$

or

Max. external capacitance:  $C_o=20\mu F$

for max. external inductance:  $L_o=3.89\mu H$

Director

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

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Intrinsically safe circuits (level of protection Ex ib IIC resp. Ex ib IIIC):

Terminal blocks X7 and X8  
 For connection of passive intrinsically safe apparatus e.g., USB-Stick  
 For each terminal blocks X7 (USB6) and X8 (USB6):  
 Terminals 1(+), 2(D-), 3(D+), 4(GND).  
 Max. output voltage:  $U_o=5.54VDC$ ; Max. output current:  $I_o=757mA$   
 Max. output power:  $P_o=3.9W$ ; Max. external capacitance:  $C_o=48.6\mu F$   
 for max. external inductance:  $L_o=1\mu H$   
 or  
 Max. external capacitance:  $C_o=33.6\mu F$ ; for max. external inductance:  $L_o=2\mu H$   
 or  
 Max. external capacitance:  $C_o=21.6\mu F$ ; for max. external inductance:  $L_o=3\mu H$   
 or  
 Max. external capacitance:  $C_o=15.6\mu F$ ; for max. external inductance:  $L_o=4\mu H$   
 or  
 Max. external capacitance:  $C_o=11.6\mu F$ ; for max. external inductance:  $L_o=5\mu H$

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# 防爆合格证 (附页)

## Electrical Apparatus for Explosive Atmospheres CERTIFICATE OF CONFORMITY

Page 8 of 8

4. Ingress Protection: IP65.

5. Specific conditions of use:

- Ambient temperature: -20°C~+55°C.
- WARNING - Potential electrostatic charging hazard - Clean only with a damp cloth! See instructions.
- The equipment is intended for installation in an area providing at least pollution degree 2 as defined within GB/T 16935.1. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- The devices (inclusive connection cables) shall only be installed in areas where intensive electrostatic charging processes are excluded.
- The intrinsically safe circuits are connected to earth. Along the intrinsically safe circuits, potential equalization must exist or the intrinsically safe apparatus connected must meet the 500 V r.m.s dielectric strength test between circuit and the frame.
- Maximum over voltage category II according to GB/T16935.1 is permitted for the non-intrinsically safe circuits.
- Before application, certified cable gland that suitable for the conditions of use and/or stopping plug shall be applied, and correctly installed.

Director

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## 5.2.2 Chinese version



编号: CNEx24.2503X

## 防爆合格证

制造单位 R. STAHL HMI Systems GmbH  
Adolf-Grimme-Allee 8, 50829 Köln, Germany

产品名称 操作终端

型号规格 ORCA01Mccdeffgghh\*

防爆标志 Ex ec ib qb [ib] [ia Ga] IIC T4 Gc, Ex tc [ib] [ia Da] IIIC T115°C Dc

产品标准 --

总装图号 10608625, 10608624, 10608623, 10608622, 10608621

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准:

GB/T 3836.1-2021 《爆炸性环境 第1部分:设备 通用要求》  
GB/T 3836.3-2021 《爆炸性环境 第3部分:由增安型“e”保护的的设备》  
GB/T 3836.4-2021 《爆炸性环境 第4部分:由本质安全型“i”保护的的设备》  
GB/T 3836.7-2017 《爆炸性环境 第7部分:由充砂型“q”保护的的设备》  
GB/T 3836.31-2021 《爆炸性环境 第31部分:由防粉尘点燃外壳“t”保护的的设备》

记事:见附页(共8页)。

中心主任

颁发日期 2024年06月12日

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# 防爆合格证 (附页)

共 8 页 第 1 页

1. 本产品已取得 IECEX 认证, 证书号: IECEX UL 23.0007X, issue0, 2023-04-04 颁发。
2. 命名规则

ORCA	01	M	cc	d	e	ff	gg	hh	*
	a	b	cc	d	e	ff	gg	hh	*

- a: 01=版本 01
- b: M=用于 2/22 区 (EPL Gc/Dc)
- cc: 运用的技术
  - 00=无+
  - TC=轻薄客户端/平板电脑
  - DM=直接监控技术
- d: E-Box
  - 0=无+
  - S=标准版
  - P=专业版
- e: D-Box
  - 0=无+
  - 3=尺寸 3
  - 4=尺寸 4
  - 6=尺寸 6
- ff: 电源
  - 00=无+
  - AC=交流电源
  - DC=直流电源
- gg: 光纤选项
  - 00=无
  - MM=MM
  - SM=SM

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# 防爆合格证 (附页)

共 8 页 第 2 页

- hh: RFID
- 00=无
- C5=RFID Crypt
- C6=RFID ASC
- C8=RFID PC-SC

\*: 与防爆无关的数字或字母

+ : 注意: ORCA 是 E-Box 和 D-Box 的组合, 只能一起认证。每个 D-Box 和 E-Box 都有自己的命名配置, 具体取决于所包含的选项, 并且 D-Box 和 E-Box 命名法都包含在标签图上。当选择选项“0”或“00”时, 如“+”所示, 这表示该选项不是相应 D-Box 或 E-Box 配置的一部分。

### 3. 电气参数:

非本安电路:

接线端子 X1 非本安供电电路 (电源) 额定电压 对于 DC 版本 (ORCA01MccdeDCgghh*), 24VDC (19.2...31.2VDC) 对于 AC 版本 (ORCA01MccdeACgghh*), 100/230VAC (85...250VAC) (47...63Hz) 额定电流: 对于 DC 版本 (ORCA01MccPeDCgghh*), $I_{max} \leq 6.3A$ , $I_{nom} = 4.2A$ 对于 DC 版本 (ORCA01MccSeDCgghh*), $I_{max} \leq 4A$ , $I_{nom} = 2.7A$ 对于 AC 版本 (ORCA01MccPeACgghh*), $I_{max} \leq 2A$ , $I_{nom} = 1.4A$ 额定功率: $P_{nom} \leq 150W$ 最高输入电压: $U_m = 250VAC$
接线端子 X2 非本安电路 X2 (LAN 0) 额定电压: $U_{nom} = 5VAC/DC$ 最高输入电压: $U_m = 30VDC$

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# 防爆合格证 (附页)

共 8 页 第 3 页

接线端子 X3 非本安电路 X3 (USB 0) 额定电压: Unom=5VAC/DC 最高输入电压: Um=30VAC
接线端子 X4 非本安电路 X4 (SERIAL) 额定电压: Unom=12VAC/DC 最高输入电压: Um=30VAC
接线端子 X10 该接口仅存在 (可选) 于 ORCA01MccPeffgghh* 中, Cooper LAN 1 接口: 非本安电路 X10 额定电压: Unom=5VAC/DC 最高输入电压: Um=30VDC
接线端子 X11 该接口仅存在 (可选) 于 ORCA01MccPeffgghh* 中, 非本安电路 X11 (USB3) 额定电压: Unom=5VAC/DC 最高输入电压: Um=30VAC

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# 防爆合格证 (附页)

共 8 页 第 4 页

<p>接线端子 X12</p> <p>该接口仅存在 (可选) 于 ORCA01MccPeffgghh* 中, 该接口可选以下配置之一:</p> <p>AUDIO 接口:</p> <p>非本安电路 X12 (AUDIO)</p> <p>额定电压: <math>U_{nom}=12VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p> <p>仅适用于无源设备</p> <p>USB 2 接口:</p> <p>非本安电路 X12 (USB)</p> <p>额定电压: <math>U_{nom}=5VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p>
<p>接线端子 X13</p> <p>该接口仅存在 (可选) 于 ORCA01MccPeffgghh* 中,</p> <p>非本安电路 X13 (USB3)</p> <p>额定电压: <math>U_{nom}=5VAC/DC</math></p> <p>最高输入电压: <math>U_m=30VAC</math></p>
<p>接线端子 X14 服务端口</p> <p>不允许使用此端口。它仅限于内部服务使用, 并且只能在安全区使用!</p>
<p>接线端子 X15 和 X16</p> <p>该接口仅存在 (可选) 于 ORCA01MccPeffgghh* 中,</p> <p>光纤 X15-LAN1-FO 和 X16-LAN2-FO 接口:</p> <p>仅适用于符合 GB 7247.1 中的 1 类限值且用于 EPL Gb 或 Gc 和 Db 或 Dc 的光辐射源。</p>

中心主任

颁发日期 2024年06月12日

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*王*



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# 防爆合格证 (附页)

共 8 页 第 5 页

本安电路 (Ex ia IIC 或 Ex ia IIIC):

接线端子 X5 和 X6  
 用于连接无源本安设备, 如键盘和鼠标。  
 接线端子 X5 (USB4) 和 X6 (USB5):  
 端子 1 (+), 2 (D-), 3 (D+), 4 (GND)  
 最高输出电压:  $U_0=5.36VDC$   
 最大输出电流:  $I_0=249mA$   
 最大输出功率:  $P_0=0.341W$   
 最大外部电容:  $C_0=65\mu F$   
 最大外部电感:  $L_0=1\mu H$   
 或  
 最大外部电容:  $C_0=46\mu F$   
 最大外部电感:  $L_0=2\mu H$   
 或  
 最大外部电容:  $C_0=32\mu F$   
 最大外部电感:  $L_0=3\mu H$   
 或  
 最大外部电容:  $C_0=25\mu F$   
 最大外部电感:  $L_0=4\mu H$   
 或  
 最大外部电容:  $C_0=21\mu F$   
 最大外部电感:  $L_0=5\mu H$

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# 防爆合格证 (附页)

共 8 页 第 6 页

接线端子 X9

用于连接无源本安设备, 如电源按钮。

接线端子 X9 (BTN - Power Button)

端子 1 (+), 2 (GND)

最高输出电压:  $U_o=5.36VDC$

最大输出电流:  $I_o=45mA$

最大输出功率:  $P_o=0.061W$

线性输出特性

最大外部电容:  $C_o=64\mu F$

最大外部电感:  $L_o=0.89\mu H$

或

最大外部电容:  $C_o=20\mu F$

最大外部电感:  $L_o=3.89\mu H$

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国家防爆

编号: CNEx24.2503X

# 防爆合格证 (附页)

共 8 页 第 7 页

本安电路 (Ex ib IIC 或 Ex ib IIIC):

接线端子 X7 和 X8

用于连接无源本安设备, 如 U 盘。

接线端子 X7 (USB6) 和 X8 (USB6):

端子 1 (+), 2 (D-), 3 (D+), 4 (GND)

最高输出电压:  $U_o=5.54VDC$

最大输出电流:  $I_o=757mA$

最大输出功率:  $P_o=3.9W$

最大外部电容:  $C_o=48.6\mu F$

最大外部电感:  $L_o=1\mu H$

或

最大外部电容:  $C_o=33.6\mu F$

最大外部电感:  $L_o=2\mu H$

或

最大外部电容:  $C_o=21.6\mu F$

最大外部电感:  $L_o=3\mu H$

或

最大外部电容:  $C_o=15.6\mu F$

最大外部电感:  $L_o=4\mu H$

或

最大外部电容:  $C_o=11.6\mu F$

最大外部电感:  $L_o=5\mu H$

中心主任

*王*

颁发日期

2024年06月12日

本证有效期

2024年06月12日至2029年06月11日



南阳防爆电气研究所有限公司  
国家防爆电气产品质量检验检测中心



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邮编: 473008 电话: 0377-63258564 传真: 0377-63208175 网址: www.china-ex.com



编号: CNEx24.2503X

# 防爆合格证 (附页)

共 8 页 第 8 页

- 4. 外壳防护等级: IP65。
- 5. 特殊使用条件:
  - 1) 使用环境温度:  $-20^{\circ}\text{C}\sim+55^{\circ}\text{C}$ 。
  - 2) 警告-潜在静电电荷危险, 请仅用湿布擦拭外壳表面, 见产品使用说明书。
  - 3) 根据 GB/T 16935.1, 该设备只应在污染程度不低于 2 级的区域使用。瞬态保护应提供不超过设备的供电端子额定峰值电压值 140% 的保护。
  - 4) 本产品 (包括连接电缆) 只能安装在不存在密集静电充电工艺过程的区域。
  - 5) 本安电路接地。沿本安电路, 必须有等电位连接, 或者所连接的本安设备必须满足电路与地之间 500 V r.m.s 的介电强度测试。
  - 6) 根据 GB/T 16935.1, 非本安电路允许的最大过电压类别为 II 类。
  - 7) 本产品安装使用时, 应配用已取得防爆合格证且适合使用条件的电缆引入装置和/或堵头, 并正确安装。

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南阳防爆电气研究所有限公司  
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公众号

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# 6 DNV certificate

Only version ORCA01ETCP6AC0000



Certificate no.:  
**TAA00003EU**

## TYPE APPROVAL CERTIFICATE

**This is to certify:**  
**that the Peripheral Equipment**

with type designation(s)  
**Orca Panel PC ORCA01ETCP6AC0000**

issued to  
**R. Stahl HMI Systems GmbH**  
**Köln, Nordrhein-Westfalen, Germany**

is found to comply with  
**DNV rules for classification – Ships, offshore units, and high speed and light craft**

**Application:**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

<b>Temperature</b>	<b>B</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>A</b>
<b>EMC</b>	<b>A</b>
<b>Enclosure</b>	<b>B</b>

Issued at **Hamburg** on **2024-06-07**

This Certificate is valid until **2029-06-06**.  
DNV local unit: **Essen**

Approval Engineer: **Torsten Dzillak**

for **DNV**



Digitally Signed By: Papanuskas, Joannis  
Location: DNV SE Hamburg, Germany

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2023-09

www.dnv.com

Page 1 of 3





Job ID: 262.1-041275-1  
Certificate no.: TAA00003EU

### Product description

The HMIs with the ORCA device platform are panel-mount devices (PM) and Operator Stations(OS). Depending on their technology (Panel PC/ Thin Client) with the task as Industrial PC with computer and monitor or Thin Client for remote control of PCs or virtual workstations.

For the approved version ORCA01ETCP6AC0000 can the following Family code applied:

ORCA=Family designation  
01=Family hardware revision  
E=Devices for Zone1, Zone 21, EPL Gb, DB  
TC=Thin Client/ Panel PC  
P-E-Box PRO  
6-Display size 6 (22")  
AC=AC power supply  
00=no fibre optic  
00 no card reader

### Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems. Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

### Type Approval documentation

#### Test Reports:

Test Report No.: U240054E1- 2<sup>nd</sup> version; E240054E1; S240054E1.

#### Documentation:

List of Type Approval documentation-TAA00003EU\_Overview\_Documents\_Rev.00; Operating Instructions ORCA device Platform Version 01.00.05 dated 2023-09-01, Test Description Monitoring V 01.04; IECExTest Report US/UL/ExTR23.0008/00 2023-04-04

Drawings see document list containing (layouts, component diagrams, part lists, schematics, placement diagrams)

Initial type approval audit 2024-05-02; block diagram xxA E-Box Pro

### Tests carried out

Applicable tests according to Class Guidance DNV-CG-0339, August 2021.

### Marking of product

The products to be marked with:

Model name  
Manufacturer name  
Serial number

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

Ensure that type approved documentation is available

Inspection of factory samples, selected at random from the production line (where practicable)

Review of production and inspection routines, including test records from product sample tests and control routines



Job ID: **262.1-041275-1**  
Certificate no.: **TAA00003EU**

Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications  
Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given  
☑ Ensuring traceability between manufacturer's product type marking and the type approval certificate  
Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.  
END OF CERTIFICATE

## 7 Release Notes

The chapter entitled "Release Notes" contains all the changes made in every version of the certificates.

### Version 01.00.00

- First edition

### Version 01.00.01

- New HW-Ref. 01.01.02 at cover
- Addition of Indian certificates PESO, BIS
- Addition of CNEx china certificate
- Addition of DNV Marine / ship approval certificate for version "ORCA01ETCP6AC0000"
- Formal changes

### Version 01.00.02

- Addition of information about "declarations / certificates of conformity" in section "Preface"
- Formal changes

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