



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEx KEM 10.0034X</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 3	<a href="#">Issue 2 (2019-03-26)</a> <a href="#">Issue 1 (2014-04-03)</a> <a href="#">Issue 0 (2010-03-12)</a>
Date of Issue:	2022-10-31		
Applicant:	<b>Weidmuller Interface GmbH</b> Klingenbergsstrasse 16 Detmold Germany		
Equipment:	<b>Universal Converter Type ACT20X-HUI-SAO-S, Type ACT20X-HUI-SAO-P and Type ACT20X-LV-HUI-SAO-S</b>		
Optional accessory:			
Type of Protection:	<b>Ex i, Ex e, Ex n</b>		
Marking:	Ex ec nC IIC T4 Gc [Ex ia Ga] IIC/IIB/IIA [Ex ia Da] IIIC [Ex ia Ma] I		

Approved for issue on behalf of the IECEx  
Certification Body:

**R. Schuller**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

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Netherlands





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Manufacturer: **Weidmuller Interface GmbH**  
Klingenbergrasse 16  
Detmold  
**Germany**

Manufacturing locations: **Weidmuller Interface GmbH**  
Klingenbergrasse 16  
Detmold  
**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 60079-15:2017** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:5.0

**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:

**NL/KEM/ExTR10.0028/03**

Quality Assessment Report:

**NL/DEK/QAR12.0052/08**



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Universal Converters, Type ACT20X-HUI-SAO-S, Type ACT20X-HUI-SAO-P and Type ACT20X-LV-HUI-SAO-S for rail mounting, are 24 V powered isolating barriers, interfacing temperature sensors and loop supplied transmitters located in a hazardous area.

The outputs to safe area are a 0/4 ... 20 mA current signal and a normally open relay contact.

Ambient temperature range -20 °C to +60 °C.

For electrical data, refer to the Annex 1.

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

The Universal Converter shall be installed in a controlled environment with suitable reduced pollution, limited to pollution degree 2 or better.

The non-intrinsically safe circuits may only be connected to an overvoltage category I or II power source, as defined in IEC 60664-1.

If the Universal Converter is installed in an explosive atmosphere where equipment protection level Gc is required, the Universal Converter shall be installed in a suitable enclosure, providing a degree of protection of at least IP54 according to IEC 60079-0.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**  
assessed per IEC 60079-0 Ed. 7.0, IEC 60079-7 Ed. 5.1, IEC 60079-15 Ed. 5.0

**Annex:**

[226311500-6-ExTR10.0028.03-Annex1.pdf](#)

## Description

Universal Converters, Type ACT20X-HUI-SAO-S, Type ACT20X-HUI-SAO-P, Type ACT20X-LV-HUI-SAO-S for rail mounting, are 24 V powered isolating barriers, interfacing temperature sensors and loop supplied transmitters located in a hazardous area.

The outputs to safe area are a 0/4 ... 20 mA current signal and a normally open relay contact.

Ambient temperature range -20 °C to +60 °C.

## Electrical data

Supply (terminals 51, 52):  $U = 19.2 \dots 31.2 \text{ Vdc}$ .

Output (terminals 41, 42):  $I = 0/4 \dots 20 \text{ mA}$ .

Relay output (terminals 43, 44):  $U \leq 32 \text{ Vac or } 30 \text{ Vdc}$ ,  $I \leq 2 \text{ Aac or } I \leq 2 \text{ Adc}$  respectively.

If the Universal Converter is installed outside the hazardous area, the following data for the Relay output apply:  $U \leq 30 \text{ Vdc or } 250 \text{ Vac}$ ,  $I \leq 2 \text{ Adc or } I \leq 2 \text{ Aac}$  respectively.

Status-Relay output (terminals 53, 54):  $U \leq 32 \text{ Vac or } 32 \text{ Vdc}$ ,  $I \leq 0.5 \text{ Aac or } I \leq 1 \text{ Adc}$  respectively.

If the Universal Converter is installed outside the hazardous area, the following data for the relay contacts apply:  $U \leq 110 \text{ Vdc or } 125 \text{ Vac}$ ,  $I \leq 0.3 \text{ Adc or } I \leq 0.5 \text{ Aac}$  respectively.

For all circuits above:  $U_m = 253 \text{ Vac}$  (max. frequency 400 Hz).

Sensor circuit (terminals 11 ... 14):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_o = 8.3 \text{ V}$ ;  $I_o = 13.1 \text{ mA}$ ;  $P_o = 27.3 \text{ mW}$ ;  $C_o = 7 \mu\text{F}$  (IIC) or  $73 \mu\text{F}$  (IIB) or  $1000 \mu\text{F}$  (IIA);

$L_o = 207 \text{ mH}$  (IIC) or  $828 \text{ mH}$  (IIB) or  $1000 \text{ mH}$  (IIA);

$L_o/R_o = 1 \text{ mH}/\Omega$  (IIC),  $5 \text{ mH}/\Omega$  (IIB) or  $10 \text{ mH}/\Omega$  (IIA).

Loop supply circuit (terminals 21-24, 22-24):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$I_o = 93 \text{ mA}$ ;  $P_o = 650 \text{ mW}$ ;  $L_o = 4 \text{ mH}$  (IIC) or  $16 \text{ mH}$  (IIB) or  $32 \text{ mH}$  (IIA);

$L_o/R_o = 54 \mu\text{H}/\Omega$  (IIC),  $218 \mu\text{H}/\Omega$  (IIB) or  $436 \mu\text{H}/\Omega$  (IIA).

For Universal Converters type ACT20X-HUI-SAO-S and ACT20X-HUI-SAO-P:

$U_o = 28 \text{ V}$ ;  $C_o = 80 \text{ nF}$  (IIC) or  $640 \text{ nF}$  (IIB) or  $2.1 \mu\text{F}$  (IIA).

For Universal Converter type ACT20X-LV-HUI-SAO-S:

$U_o = 21.4 \text{ V}$ ;  $C_o = 0.16 \mu\text{F}$  (IIC) or  $1.13 \mu\text{F}$  (IIB) or  $4.15 \mu\text{F}$  (IIA).

Loop input circuit (terminals 21-23):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 120 \text{ mA}$ ;  $P_i = 900 \text{ mW}$ ;  $C_i = 3 \text{ nF}$ ;  $L_i = 1 \mu\text{H}$ ;

$I_o = 1.1 \text{ mA}$ ;  $P_o = 8 \text{ mW}$ ;  $L_o = 1000 \text{ mH}$  (all groups);

$L_o/R_o = 4 \text{ mH}/\Omega$  (IIC),  $17 \text{ mH}/\Omega$  (IIB) or  $35 \text{ mH}/\Omega$  (IIA).

For Universal Converters type ACT20X-HUI-SAO-S and ACT20X-HUI-SAO-P:

$U_o = 28 \text{ V}$ ;  $C_o = 80 \text{ nF}$  (IIC) or  $640 \text{ nF}$  (IIB) or  $2.1 \mu\text{F}$  (IIA).

For Universal Converter type ACT20X-LV-HUI-SAO-S:

$U_o = 21.4 \text{ V}$ ;  $C_o = 0.16 \mu\text{F}$  (IIC) or  $1.13 \mu\text{F}$  (IIB) or  $4.15 \mu\text{F}$  (IIA).

Loop input supply circuit (terminals 21-22):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 120 \text{ mA}$ ;  $P_i = 900 \text{ mW}$ ;  $C_i = 3 \text{ nF}$ ;  $L_i = 1 \mu\text{H}$ ;

$U_o = 8.3 \text{ V}$ ;  $I_o = 0.2 \text{ mA}$ ;  $P_o = 0.4 \text{ mW}$ ;  $C_o = 7 \mu\text{F}$  (IIC) or  $73 \mu\text{F}$  (IIB) or  $1000 \mu\text{F}$  (IIA);

$L_o = 1000 \text{ mH}$  (all groups);  $L_o/R_o = 100 \text{ mH}/\Omega$  (IIC),  $400 \text{ mH}/\Omega$  (IIB) or  $800 \text{ mH}/\Omega$  (IIA).

Combination of the loop supply circuit (terminals 22-24) of one Universal Converter with the loop input circuit (terminals 21-22) of a second Universal Converter (where terminal 22 of the first Universal Converter is connected with terminal 21 of the second Universal converter):

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 120 \text{ mA}$ ;  $P_i = 900 \text{ mW}$ ;  $C_i = 3 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ ;

$I_o = 93 \text{ mA}$ ;  $P_o = 650 \text{ mW}$ ;  $L_o = 4 \text{ mH}$  (IIC) or  $16 \text{ mH}$  (IIB) or  $32 \text{ mH}$  (IIA);

$L_o/R_o = 54 \mu\text{H}/\Omega$  (IIC),  $218 \mu\text{H}/\Omega$  (IIB) or  $436 \mu\text{H}/\Omega$  (IIA).

For Universal Converters type ACT20X-HUI-SAO-S and ACT20X-HUI-SAO-P:

$U_o = 28 \text{ V}$ ;  $C_o = 80 \text{ nF}$  (IIC) or  $640 \text{ nF}$  (IIB) or  $2.1 \mu\text{F}$  (IIA).

For Universal Converter type ACT20X-LV-HUI-SAO-S:

$U_o = 21.4 \text{ V}$ ;  $C_o = 0.16 \mu\text{F}$  (IIC) or  $1.13 \mu\text{F}$  (IIB) or  $4.15 \mu\text{F}$  (IIA).

Combination of the loop input circuit (terminals 21-22) of one Universal Converter in series with the loop input circuit (terminals 21-22) of a second Universal Converter:

in type of protection intrinsic safety Ex ia IIC/IIB/IIA/IIIC/I, with following maximum values:

$U_i = 30 \text{ V}$ ;  $I_i = 120 \text{ mA}$ ;  $P_i = 900 \text{ mW}$ ;  $C_i = 6 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ ;

$U_o = 16.6 \text{ V}$ ;  $I_o = 0.2 \text{ mA}$ ;  $P_o = 0.8 \text{ mW}$ ;  $C_o = 0.4 \mu\text{F}$  (IIC) or  $2.3 \mu\text{F}$  (IIB) or  $9.5 \mu\text{F}$  (IIA);

$L_o = 1000 \text{ mH}$  (all groups);  $L_o/R_o = 25 \text{ mH}/\Omega$  (IIC),  $100 \text{ mH}/\Omega$  (IIB) or  $200 \text{ mH}/\Omega$  (IIA).

The intrinsically safe circuits are infallibly galvanically isolated from the non-intrinsically safe circuits.

For group IIIC, the parameters of group IIB apply;

For group I, the parameters of group IIA apply.