



CERTYFIKAT

[1] **COMPLEMENTARY CERTIFICATE
OF THE WE TYPE EXAMINATION**

[2] Devices, protection systems, components and subassemblies designed for hazardous areas.
Directive 94/9/WE
(Regulation of the Minister of Economics, Labour and Social Policy (MGPiPS) from 28.07.2003.
Official Journal (Dz.U.) No.43, Item 3).

[3] Certificate of the WE type examination

KDB 04ATEX120/1

[4] Device:

S2Ex type Transducer

[5] Manufacturer:

Labor-Aster

[6] Address:

19 Czechowicka St., 04-218 Warsaw, Poland

[7] This certification complements the EC type examination certificate KDB 04ATEX120 relating to the equipment or protective system designed and constructed in accordance with the documentation specified in the annex to the above mentioned certificate. The equipment or protective system has been amended as described in the annex to this supplementary certificate and the documents therein referred to.

This supplementary certificate is valid in conjunction with the original certificate.
Examination and test results are detailed in the report KDB No. 04 235 [T-5127]

[8] The device or protection system should be marked:



I (M1) [EExia]I

II (1) GD [EExia]IIC

Date of issue: 11.02.2005

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KDB ATEX

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Niniejszy certyfikat może być
powielany jedynie w całości
wraz z załącznikami



[9]

Annex

[10] **The complementary Certificate of the WE KDB 04ATEX120 type examination**

[11] **Description of changes to the device or system:**

At the manufacturer request the intrinsic parameters of the converter type-certificate KDB S2Ex 04ATEX120 are supplemented with parameters for explosiveness group I and the C_o value are changed as follows:

1. Separator type S2Ex-SA:

Converts the current or voltage signal from hazardous area into any current or voltage signal.

a) The intrinsically safe input circuits (**terminals 1-2**) :

$U_o=7,5V$, $I_o=5mA$, $P_o=40mW$, $L_i\sim 0$, $C_i=2nF$,

values L_o i C_o should be adopted according to the table shown below:

Group of hazardous	$L_o[mH]$	$C_o [\mu F]$
I and IIA	100	any
IIB	100	170
IIC	100	11

b) The intrinsically safe input parameters - terminals 1-2.

$U_i=30V$, $I_i=any$, $P_i=any$.

c) Parameters of non-intrinsically safe circuits.

„output” - terminals 5-6 and „supply” - terminals 7-8: $U_m=250V$.

2. Transducer type S2Ex-U:

Converts the signal from the thermocouple or other sensor installed in the hazardous area into any current or voltage signal.

a) The intrinsically safe input circuits (**terminals 1, 2, 3, 4**)

$U_o=30V$, $I_o=15mA$, $P_o=110mW$, $L_i\sim 0$, $C_{i1-2}=1nF$, $C_{i3-4}=1nF$

values L_o i C_o should be adopted according to the table shown below:

Group of hazardous	$L_o[mH]$	$C_o [\mu F]$
IIA	30	1,8
IIB	30	0,56
IIC	30	0,066

b) The intrinsically safe input parameters - terminals 1-2:

$U_i=30V$, $I_i=any$, $P_i=any$.

c) Parameters of non-intrinsically safe circuits.

„output” - terminals 5-6 and „supply” - terminals 7-8: $U_m=250V$.



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[11] **Description of changes to the device or system.**

3. Transducer type S2Ex-R:

Converts the signal from the thermo resistance sensor, potentiometer or other sensor installed in a hazardous area into any current or voltage signal.

- a) The intrinsically safe input circuits (**terminals 1, 2, 3, 4**) – 2- or 3- or 4 –wire measurement of resistance :

$U_o = 30V$, $I_o = 15mA$, $P_o = 100mW$, $L_i \sim 0$, $C_{i1-4} = 1nF$, $C_{i2-4} = 1nF$, $C_{i3-4} = 1nF$
 values L_o i C_o should be adopted according to the table shown below:

Group of hazardous	$L_o[mH]$	$C_o[\mu F]$
IIA	30	1,8
IIB	30	0,56
IIC	30	0,066

- b) Parameters of non-intrinsically safe circuits.

„output” - terminals 5-6 and „supply” - terminals 7-8: $U_m = 250V$.

4. Separator type S2Ex-SB:

Converts the current or voltage signal to any current or voltage signal transmitted to the hazardous area.

- a) The intrinsically safe input circuits (**terminals 1-2**): $C_i = 2nF$, $L_i \sim 0$

values L_o i C_o should be adopted according to the table shown below:

Option	$P_o[W]$	$U_o[V]$	$I_o[mA]$	$L_o[mH]$			$C_o[\mu F]$		
				IIA	IIB	IIC	IIA	IIB	IIC
12V	0,75	12,6	92	20	11	2,8	27	7,4	1,15
14V		14,7					14,9	3,86	0,62
16V		16,8					9,3	2,29	0,39
20V		21,0					4,78	1,27	0,188
24V		25,2					2,90	0,82	0,107
24V/2W	2	26,0	120	14	7	1,4	2,60	0,77	0,099

- b) Parameters of non-intrinsically safe circuits.

„input” - terminals 5-6 and „supply” - terminals 7-8: $U_m = 250V$.

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[11] **Description of changes to the device or system: continued**

5. Power supply type S2Ex-Supply.

Powers the device in a hazardous area.

- a) Intrinsically safe, the power output circuit (**terminals 1-2**) : $C_i=0$, $L_i=0$
values L_o i C_o should be adopted according to the table shown below:

Option	Po[W]	Uo[V]	Io[mA]	L _{max} [mH]			C _{max} [μF]		
				IIA	IIB	IIC	IIA	IIB	IIC
U _{out} =0÷12V	1,52	U _{wyj} +8%U _{wyj}	120	14	7	1,6	9,1	2,24	0,382
U _{wyj} =12÷24V	2	U _{wyj} +8%U _{wyj}	120	14	7	1,4	2,60	0,77	0,099

- b) Parameters of non-intrinsically safe circuits.
„supply” - terminals 7-8: $U_m=250V$.

6. Repeater Power Supply type S2Ex-Z.

Powers and converts the signal from the 2-wire 4-20mA transducers installed in the hazardous area for any current or voltage signal.

- a) Intrinsically safe power supply – measuring input (**terminals 1-2**) : $C_i=2$ nF, $L_i=0$
values L_o i C_o should be adopted according to the table shown below:

Option	Po[W]	Uo[V]	Io[mA]	Lo[mH]			Co[μF]		
				IIA	IIB	IIC	IIA	IIB	IIC
16V	0,75	16,8	92	20	11	2,8	9,3	2,29	0,39
18V		18,9					6,39	1,60	0,262
20V		21					4,78	1,27	0,188
22V		23,1					3,67	1,02	0,143
24V		25,2					2,90	0,82	0,107

- b) Parameters of non-intrinsically safe circuits.
„output” - terminals 5-6 and „supply” - terminals 7-8: $U_m=250V$.



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[11] Description of changes to the device or system: continued

7. Transducer type S2Ex-F.

Powers and converts the signal from transmitters installed in the hazardous area, generating a string (wave) pulses to any current or voltage signal.

- a) The intrinsically safe input circuits (**terminals 1, 2, 3, 4**) : $C_i=0nF$, $L_i=0$
values L_o i C_o should be adopted according to the table shown below:

Option	Po[W]	Uo[V]	Io[mA]	Lo[mH]			Co[μF]		
				IIA	IIB	IIC	IIA	IIB	IIC
8,2V	0,1	8,6	14	100	100	100	dowolna	55	6,2
12V	0,75	12,6	92	20	11	2,8	27	7,4	1,15
16V		16,8					9,3	2,29	0,39
18V		18,9					6,39	1,60	0,262
20V		21					4,78	1,27	0,188
24V		25,2					2,90	0,82	0,107

- b) The intrinsically safe input parameters - terminals „1, 2, 3”:

$U_i=30V$, $I_i=any$, $P_i=any$.

- c) Parameters of non-intrinsically safe circuits.

„output” - terminals 5-6 and „supply” - terminals 7-8: $U_m=250V$.



[9]

Annex

[10]

The Certificate of the WE KDB 04ATEX120 type examination

[11] **Description of changes to the device or system:**

[12] **Reports of studies:**

Report No: KDB No 04.120

[13] **Special conditions of use:**

lacking

[14] **The essential requirements of safety and health:**

See certificate KDB 04ATEX120.

[15] **The list of agreed documentation:**

not required