Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC Type Examination Certificate

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-Type Examination Certificate Number

PTB 01 ATEX 2053

(4) Apparatus: Safety Barrier Type 9002/..-...-...-..1

(5) Manufacturer: R. STAHL SCHALTGERÄTE GMBH

(6) Address: 74638 Waldenburg, DEUTSCHLAND

(7) The construction of this apparatus and any acceptable variation thereto is specified in the schedule to this type examination certificate.

(8) The Physikalisch Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this apparatus has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The results of the test are recorded in the confidential report No. PTB Ex 01-29099.

(9) The Essential Health and Safety Requirements are met by compliance with

EN 50014:1997+ A1 + A2 **EN 50020:1994**

(10) If the sign “X“ is placed after the certificate number, it indicates special conditions for safe use of the apparatus specified in the schedule to this certificate.

(11) This EC Type Examination Certificate relates only to the design and construction of the specified apparatus in accordance with Directive 94/9/EC. Further requirements of this directive apply to the manufacture and supply of this equipment.

(12) The marking of the apparatus shall include the following:

II (1/2) G [EEx ia/ib] IIB/IIC

Zertifizierungsstelle Explosionsschutz
by order
PTB
(signature)
Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, 30 May 2001

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(13) # S h e d u l e

(14) ## EC Type Examination Certificate PTB 01 ATEX 2053

(15) Description of the equipment

The safety barriers Type 9002/..-...-...-..1 are associated apparatus for the safe separation of intrinsically safe from non-intrinsically safe circuits. They include limitation equipment for two circuits with current limitation and voltage limitation by reference to the equipotential bonding conductor.

As determined, the connections for the equipotential bonding conductor are fail-safely connected with the local system of the equipotential bonding conductor.

The maximum permissible ambient temperature range is -20°C ≤ T_a ≤ +60°C (+50°C).

Electrical data

non-intrinsically safe circuits — safety maximum voltage U_m = 250 V

intrinsically safe circuits — with type of protection Intrinsic safety EEx ia/ib IIB/IIC, linear characteristic, according to the following table:

(C_o u. L_o: characteristics to EN 50020, table A.2, or illustration A.4 at U_o ≤ 24 V or PTB table at U_o > 24 V)

Type/channel						
9002/00-260-138-001 and 9002/11-260-138-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	26	87	0,57	Lo / mH	2,7	15,5
				Co / µF	0,099	0,77
II	20	51	0,26	Lo / mH	14	54
				Co / µF	0,22	1,41
I + II	26	138	0,85	Lo / mH	0,81	5,1
				Co / µF	0,087	0,67
9002/00-120-024-001 and 9002/11-120-024-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	12	12	0,04	Lo / mH	240	850
				Co / µF	1,41	9
II	12	12	0,04	Lo / mH	240	850
				Co / µF	1,41	9
I + II	12	24	0,07	Lo / mH	63	230
				Co / µF	1,1	7,1
9002/10-187-020-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	9,33	20	0,05	Lo / mH	90	330
				Co / µF	3,9	29
II	9,33	20	0,05	Lo / mH	90	330
				Co / µF	3,9	29
I + II	18,7	20	0,09	Lo / mH	90	330
				Co / µF	0,27	1,64

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9002/10-187-270-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	9,33	270	0,63	Lo / mH	0,23	2,2
				Co / µF	3,9	29
II	9,33	270	0,63	Lo / mH	0,23	2,2
				Co / µF	3,9	29
I + II	18,7	270	1,26	Lo / mH	0,23	2,2
				Co / µF	0,27	1,64
9002/10-210-030-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	10,5	30	0,08	Lo / mH	40	150
				Co / µF	2,41	16,8
II	10,5	30	0,08	Lo / mH	40	150
				Co / µF	2,41	16,8
I + II	21	30	0,16	Lo / mH	40	150
				Co / µF	0,188	1,27
9002/00-280-186-001 and 9002/11-280-186-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	93	0,65	Lo / mH	2	13
				Co / µF	0,083	0,65
II	28	93	0,65	Lo / mH	2	13
				Co / µF	0,083	0,65
I + II	28	186	1,3	Lo / mH	-	2,8
				Co / µF	-	0,551
9002/11-130-360-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	13	321	1,04	Lo / mH	0,19	1,6
				Co / µF	1	6,2
II	1,6	39	0,016	Lo / mH	24	91
				Co / µF	100	1000
I + II	13	360	1,17	Lo / mH	0,17	1,3
				Co / µF	0,79	5
9002/11-137-029-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	13,7	14,5	0,05	Lo / mH	160	560
				Co / µF	0,79	5
II	13,7	14,5	0,05	Lo / mH	160	560
				Co / µF	0,79	5
I + II	13,7	29	0,1	Lo / mH	43	160
				Co / µF	0,67	4,18
9002/11-280-112-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	109	0,76	Lo / mH	1,3	9
				Co / µF	0,083	0,65
II	28	3	0,02	Lo / mH	50	150
				Co / µF	0,083	0,65
I + II	28	112	0,78	Lo / mH	0,76	8,4
				Co / µF	0,065	0,551
9002/11-280-244-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	184	1,29	Lo / mH	-	2,9
				Co / µF	-	0,65
II	28	60	0,42	Lo / mH	-	25
				Co / µF	-	0,65
I + II	28	244	1,71	Lo / mH	-	1,1
				Co / µF	-	0,62

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9002/11-280-293-001 and 9002/11-280-293-021	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	89	0,63	Lo / mH	2,2	14
				Co / µF	0,083	0,65
II	9,56	180	0,43	Lo / mH	0,6	5
				Co / µF	3,6	26
I + II	28	269	1,05	Lo / mH	-	0,56
				Co / µF	-	0,62
9002/11-199-030-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	19,9	15	0,075	Lo / mH	160	560
				Co / µF	0,223	1,42
II	19,9	15	0,075	Lo / mH	160	560
				Co / µF	0,223	1,42
I + II	19,9	30	0,15	Lo / mH	40	150
				Co / µF	0,223	1,42
9002/13-199-225-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	19,9	222	1,1	Lo / mH	0,39	3,18
				Co / µF	0,223	1,42
II	19,9	3	0,015	Lo / mH	1000	1000
				Co / µF	0,223	1,42
I + II	19,9	225	1,12	Lo / mH	0,37	3,15
				Co / µF	0,213	1,38
9002/13-252-121-041	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	25,2	118	0,74	Lo / mH	1,3	7,4
				Co / µF	0,107	0,82
II	25,2	0	0,02	Lo / mH	50	150
				Co / µF	0,107	0,82
I + II	25,2	121	0,76	Lo / mH	1,25	7,35
				Co / µF	0,104	0,8
9002/13-280-093-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	90	0,63	Lo / mH	2,2	14
				Co / µF	0,083	0,65
II	28	3	0,021	Lo / mH	50	150
				Co / µF	0,083	0,65
I + II	28	93	0,651	Lo / mH	2	13
				Co / µF	0,08	0,636
9002/13-280-100-041	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	97	0,679	Lo / mH	1,8	12
				Co / µF	0,083	0,65
II	28	0	0,021	Lo / mH	50	150
				Co / µF	0,083	0,65
I + II	28	100	0,7	Lo / mH	1,55	11
				Co / µF	0,08	0,635
9002/13-280-110-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	107	0,749	Lo / mH	1,35	9,6
				Co / µF	0,083	0,65
II	28	3	0,021	Lo / mH	50	150
				Co / µF	0,083	0,65
I + II	28	110	0,77	Lo / mH	1,25	9
				Co / µF	0,08	0,635

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9002/13-280-188-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	185	1,295	Lo / mH	-	2,85
				Co / µF	-	0,65
II	28	3	0,021	Lo / mH	-	150
				Co / µF	-	0,65
I + II	28	188	1,316	Lo / mH	-	2,7
				Co / µF	-	0,635
9002/22-016-383-111	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	0,8	191,5	0,038	Lo / mH	0,54	4,4
				Co / µF	100	1000
II	0,8	191,5	0,038	Lo / mH	0,54	4,4
				Co / µF	100	1000
I + II	1,6	383	0,077	Lo / mH	0,16	0,96
				Co / µF	100	1000
9002/22-032-300-111	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	1,6	150	0,06	Lo / mH	1,3	7
				Co / µF	100	1000
II	1,6	150	0,06	Lo / mH	1,3	7
				Co / µF	100	1000
I + II	3,2	300	0,12	Lo / mH	0,2	1,8
				Co / µF	100	1000
9002/22-048-442-111	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	2,4	221	0,133	Lo / mH	0,4	3,19
				Co / µF	100	1000
II	2,4	221	0,133	Lo / mH	0,4	3,19
				Co / µF	100	1000
I + II	4,8	442	0,266	Lo / mH	0,12	0,54
				Co / µF	100	1000
9002/22-158-200-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	7,9	100	0,198	Lo / mH	4,0	15
				Co / µF	8,8	115
II	7,9	100	0,198	Lo / mH	4	15
				Co / µF	8,8	115
I + II	15,8	200	0,395	Lo / mH	0,5	4
				Co / µF	0,478	2,88
9002/22-240-024-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	12	12	0,04	Lo / mH	240	850
				Co / µF	1,41	9
II	12	12	0,04	Lo / mH	240	850
				Co / µF	1,41	9
I + II	24	24	0,08	Lo / mH	41	145
				Co / µF	0,125	0,93
9002/22-240-160-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	12	80	0,24	Lo / mH	6	22
				Co / µF	1,41	9
II	12	80	0,24	Lo / mH	6	22
				Co / µF	1,41	9
I + II	24	160	0,48	Lo / mH	0,7	4
				Co / µF	0,125	0,93

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9002/33-280-000-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	"0"		Lo / mH	1000	1000
				Co / µF	0,083	0,65
II	28	"0"		Lo / mH	1000	1000
				Co / µF	0,083	0,65
I + II	28	"0"		Lo / mH	1000	1000
				Co / µF	0,083	0,65
9002/34-280-000-01	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	20	"0"		Lo / mH	1000	1000
				Co / µF	0,22	1,41
II	8	"0"		Lo / mH	1000	1000
				Co / µF	8,4	100
I + II	28	"0"		Lo / mH	1000	1000
				Co / µF	0,083	0,65
9002/77-093-040-001 (as well as 9002/22 ...)	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	9,3	20	0,05	Lo / mH	90	330
				Co / µF	4,1	31
II	9,3	20	0,05	Lo / mH	90	330
				Co / µF	4,1	31
I + II	9,3	40	0,09	Lo / mH	23	87
				Co / µF	4,1	31
9002/77-093-300-001 (as well as 9002/22 ...)	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	9,3	150	0,35	Lo / mH	1,3	7
				Co / µF	4,1	31
II	9,3	150	0,35	Lo / mH	1,3	7
				Co / µF	4,1	31
I + II	9,3	300	0,7	Lo / mH	0,2	1,8
				Co / µF	4,1	31
9002/77-100-400-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	10	200	0,5	Lo / mH	0,5	4
				Co / µF	3	20,2
II	10	200	0,5	Lo / mH	0,5	4
				Co / µF	3	20,2
I + II	10	400	1	Lo / mH	0,15	0,8
				Co / µF	3	20,2
9002/77-150-300-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	15	150	0,56	Lo / mH	1,3	7
				Co / µF	0,58	3,55
II	15	150	0,56	Lo / mH	1,3	7
				Co / µF	0,58	3,55
I + II	15	300	1,13	Lo / mH	0,2	1,8
				Co / µF	0,58	3,55
9002/77-220-146-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	22	73	0,4	Lo / mH	7	26
				Co / µF	0,165	1,14
II	22	73	0,4	Lo / mH	7	26
				Co / µF	0,165	1,14
I + II	22	146	0,8	Lo / mH	1,4	7,4
				Co / µF	0,165	1,14

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9002/77-220-296-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	22	148	0,81	Lo / mH	1,35	7,2
				Co / µF	0,165	1,14
II	22	148	0,81	Lo / mH	1,35	7,2
				Co / µF	0,165	1,14
I + II	22	296	1,63	Lo / mH	0,24	1,84
				Co / µF	0,165	1,14
9002/77-280-094-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	28	47	0,33	Lo / mH	10,1	30
				Co / µF	0,083	0,65
II	28	47	0,33	Lo / mH	10,1	30
				Co / µF	0,083	0,65
I + II	28	94	0,66	Lo / mH	1,96	12,5
				Co / µF	0,083	0,65

All intrinsically safe and non-intrinsically safe circuits are galvanically connected with each other and with the connections for the equipotential bonding conductor via their reference conductors.

(16) Test report PTB Ex 01-29099

(17) Special conditions

see operating instructions

(18) Essential health and safety requirements

covered by compliance with the above standards

Zertifizierungsstelle Explosionsschutz
by order
PTB
signed: Johannsmeyer L.S.

Braunschweig, 30. May 2001

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1st A M E N D M E N T

according to Directive 94/9/EC Appendix III Subparagraph 6

to EC-Type Examination Certificate PTB 01 ATEX 2053

Equipment: Safety Barrier Type 9002/00-260-138-001 and 9002/11-260-138-001

Marking: **II (1/2) G [EEx ia/ib] IIB/IIC**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30
74638 Waldenburg, GERMANY

Description of the additions and modifications

The electrical data regarding power P_o mentioned in the following can also be assigned to the safety barriers Type 9002/00-260-138-001 and 9002/11-260-138-001 - they result without technical amendments from the drop of the rounding in no-load operation and short circuit current.

All other data remain unchanged.

Electrical data:

(C_o and L_o: reference data to EN 50 020, Tab. A.2, or picture A.4 with $U_o \leq 24$ V or PTB table with $U_o > 24$ V)

Type / Channel						
9002/00-260-138-001 and 9002/11-260-138-001	Uo [V]	Io [mA]	Po [W]		IIC	IIB
I	26	87	0,54	Lo / mH	2,7	15,5
				Co / µF	0,099	0,77
II	20	51	0,245	Lo / mH	14	54
				Co / µF	0,22	1,41
I + II	26	138	0,785	Lo / mH	0,81	5,1
				Co / µF	0,087	0,67

Test report: PTB Ex 01-21402

Zertifizierungsstelle Explosionsschutz
On behalf of

Braunschweig, 26. October 2001

(signature)
Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Uncertified Translation

Physikalisch-Technische Bundesanstalt

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2 nd A M E N D M E N T

according to Directive 94/9/EG Annex III.6

to EC Type Examination Certificate PTB 01 ATEX 2053

Equipment: Safety Barrier Type 9002/..-…-…-..1

Marking: ⟨Ex⟩ **II (1/2) G D [EEx ia/ib] IIB/IIC**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30, 74638 Waldenburg, GERMANY

Description of supplements and modifications

The Safety Barriers Type 9002/..-...-...-..1 may be also used as associated apparatus for hazardous locations endangered by dusts.

All other data remain unchanged.

Remark: For hazardous areas endangered by dust the maximum inductance and capacitance values as given for gas group IIB apply.

Test Report: PTB Ex 04-24070

Zertifizierungsstelle Explosionsschutz
by order

Braunschweig, 26. April 2004

(signature)
Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

3. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

(Translation)

Equipment: Safety barrier, type 9002/..-...-...-..1

Marking:  **II 3 (1) G Ex nA [ia Ga] IIC T4 Gc AND II (1) D [Ex ia Da] IIIC**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30, 74638 Waldenburg, Germany

Description of supplements and modifications

The features of category II 3 G previously certified in the conformity statement PTB 01 ATEX 2135 are integrated here.

Overall conformity is confirmed in accordance with the current standards stated below.

The equipment can be installed outside of the hazardous area or inside hazardous locations up to category II 3 G (additional enclosure protection required). As an associated apparatus it provides an intrinsically safe circuit of category II 1 G or II 1 D respectively.

Note: Deviating from the previous state the symbol X is henceforth appended to the certificate number. This points to the requirement of an appropriate enclosure protection for the installation in hazardous areas of zone 2 (as before this circumstance is clearly pointed to in the operating instructions).

Note: The values of the maximum permissible inductances and capacitances in the intrinsically safe circuit for application in hazardous locations due to combustible dust, correspond to those of gas group IIB.

Some variants of the safety barrier, type 9002/..-...-...-..1 are also manufactured with an internally modified design.

The safety-related specification applies without changes. It is, however, tabulated again to represent a summary of the current state.

The connection between the terminals for the equipotential bonding conductor and the local equipotential bonding system is performed as fail-safe connection.

The maximum permissible range of the ambient temperature is -20 °C $\leq T_a \leq$ +60 °C (+50 °C) according to the following tables.

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Electrical data

non-intrinsically safe circuits

(terminals 1 and 2)

type of protection Non-Sparking Ex nA Gc,

safety-related maximum voltage as associated apparatus:

U_m = 253 V

Nominal data correspond to the following table:

Type	T_a [°C]	channel I		channel II	
		U_N [V]	I_N [mA]	U_N [V]	I_N [mA]
9002/00-120-024-001	60	-9.5	7.7	-9.5	7.7
9002/00-260-138-001	60	-22.5	62	-17.5	37
9002/00-280-186-001	60	-25	69	-25	69
9002/10-187-020-001	60	+6	11	-6	11
9002/10-187-270-001	60	+6	122	-6	122
9002/10-210-030-001	60	+8	21	-8	21
9002/11-120-024-001	60	+9.5	7.7	+9.5	7.7
9002/11-130-360-001	60	+10	100	+1	19
9002/11-137-029-001	60	+10	10	+10	10
9002/11-199-030-001	60	+16	10	+16	10
9002/11-260-138-001	60	+22.5	62	+17.5	37
9002/11-280-112-001	60	+24	8	+24	23
9002/11-280-186-001	60	+25	69	+25	69
9002/11-280-244-001	60	+24	70	+24	48
9002/11-280-293-001	60	+25	69	+6	88
9002/11-280-293-021	60	+25	69	+6	88
9002/13-199-225-001	60	+16	125	+16	80
9002/13-252-121-041	60	+20..35	80	+22	80
9002/13-280-093-001	60	+24	67	+24	67
9002/13-280-100-041	60	+20..35	35	+26	35
9002/13-280-110-001	60	+24	80	+24	80
9002/13-280-188-001	60	+24	70	+24	70
9002/22-016-383-111	60	0.35	40	0.35	40
9002/22-032-300-111	60	±0.7	33	±0.7	33
9002/22-048-442-111	60	±1.4	78	±1.4	78
9002/22-158-200-001	60	±5.5	57	±5.5	57
9002/22-240-024-001	60	±9	7.7	±9	7.7
9002/22-240-160-001	60	±9	50	±9	50
9002/33-280-000-001	60	+25.5	50	+25.5	50
9002/34-280-000-001	60	+16	100	-5	100
9002/77-093-040-001	60	±6	11	±6	11
9002/77-093-300-001	60	±6	73	±6	73
9002/77-100-400-001	60	±6	87	±6	87
9002/77-150-300-001	60	±12	95	±12	95
9002/77-220-146-001	50	±18	50	±18	50

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type	T_a [°C]	channel I		channel II	
		U_N [V]	I_N [mA]	U_N [V]	I_N [mA]
9002/77-220-296-001	50	±18	80	±18	80
9002/77-280-094-001	60	±24	33	±24	33

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

intrinsically safe circuit (terminals 3 and 4)

type of protection Intrinsic Safety Ex ia IIB/IIC Ga or Ex ia IIIC Da, linear characteristic, maximum values according to the following tables

Limiting values L_o and C_o alternatively in the circuit

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/00-260-138-001 + 9002/11-260-138-001							
I	60	26	87	0.57	Lo / mH	2.7	15.5
					Co / µF	0.099	0.77
II	60	20	51	0.26	Lo / mH	14	54
					Co / µF	0.22	1.41
I + II	60	26	138	0.85	Lo / mH	0.81	5.1
					Co / µF	0.087	0.67
9002/00-120-024-001 + 9002/11-120-024-001							
I	60	12	12	0.04	Lo / mH	240	850
					Co / µF	1.41	9
II	60	12	12	0.04	Lo / mH	240	850
					Co / µF	1.41	9
I + II	60	12	24	0.07	Lo / mH	63	230
					Co / µF	1.1	7.1
9002/10-187-020-001							
I	60	9.33	20	0.05	Lo / mH	90	330
					Co / µF	3.9	29
II	60	9.33	20	0.05	Lo / mH	90	330
					Co / µF	3.9	29
I + II	60	18.7	20	0.09	Lo / mH	90	330
					Co / µF	0.27	1.64
9002/10-187-270-001							
I	60	9.33	270	0.63	Lo / mH	0.23	2.2
					Co / µF	3.9	29
II	60	9.33	270	0.63	Lo / mH	0.23	2.2
					Co / µF	3.9	29
I + II	60	18.7	270	1.26	Lo / mH	0.23	2.2
					Co / µF	0.27	1.64
9002/10-210-030-001							
I	60	10.5	30	0.08	Lo / mH	40	150
					Co / µF	2.41	16.8
II	60	10.5	30	0.08	Lo / mH	40	150
					Co / µF	2.41	16.8
I + II	60	21	30	0.16	Lo / mH	40	150
					Co / µF	0.188	1.27
9002/00-280-186-001 + 9002/11-280-186-001							
I	60	28	93	0.65	Lo / mH	2	13
					Co / µF	0.083	0.65
II	60	28	93	0.65	Lo / mH	2	13
					Co / µF	0.083	0.65
I + II	60	28	186	1.3	Lo / mH	-	2.8
					Co / µF	-	0.551

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/11-130-360-001							
I	60	13	321	1.04	Lo / mH	0.19	1.6
					Co / µF	1	6.2
II	60	1.6	39	0.016	Lo / mH	24	91
					Co / µF	100	1000
I + II	60	13	360	1.17	Lo / mH	0.17	1.3
					Co / µF	0.79	5
9002/11-137-029-001							
I	60	13.7	14.5	0.05	Lo / mH	160	560
					Co / µF	0.79	5
II	60	13.7	14.5	0.05	Lo / mH	160	560
					Co / µF	0.79	5
I + II	60	13.7	29	0.1	Lo / mH	43	160
					Co / µF	0.67	4.18
9002/11-280-112-001							
I	60	28	109	0.76	Lo / mH	1.3	9
					Co / µF	0.083	0.65
II	60	28	3	0.02	Lo / mH	50	150
					Co / µF	0.083	0.65
I + II	60	28	112	0.78	Lo / mH	0.76	8.4
					Co / µF	0.065	0.551
9002/11-280-244-001							
I	60	28	184	1.29	Lo / mH	-	2.9
					Co / µF	-	0.65
II	60	28	60	0.42	Lo / mH	-	25
					Co / µF	-	0.65
I + II	60	28	244	1.71	Lo / mH	-	1.1
					Co / µF	-	0.62
9002/11-280-293-001 + 9002/11-280-293							
I	60	28	89	0.63	Lo / mH	2.2	14
					Co / µF	0.083	0.65
II	60	9.56	180	0.43	Lo / mH	0.6	5
					Co / µF	3.6	26
I + II	60	28	269	1.05	Lo / mH	-	0.56
					Co / µF	-	0.62
9002/11-199-030-001							
I	60	19.9	15	0.075	Lo / mH	160	560
					Co / µF	0.223	1.42
II	60	19.9	15	0.075	Lo / mH	160	560
					Co / µF	0.223	1.42
I + II	60	19.9	30	0.15	Lo / mH	40	150
					Co / µF	0.223	1.42

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/13-199-225-001							
I	60	19.9	222	1.1	Lo / mH	0.39	3.18
					Co / µF	0.223	1.42
II	60	19.9	3	0.015	Lo / mH	1000	1000
					Co / µF	0.223	1.42
I + II	60	19.9	225	1.12	Lo / mH	0.37	3.15
					Co / µF	0.213	1.38
9002/13-252-121-041							
I	60	25.2	118	0.74	Lo / mH	1.3	7.4
					Co / µF	0.107	0.82
II	60	25.2	0	0.02	Lo / mH	50	150
					Co / µF	0.107	0.82
I + II	60	25.2	121	0.76	Lo / mH	1.25	7.35
					Co / µF	0.104	0.8
9002/13-280-093-001							
I	60	28	90	0.63	Lo / mH	2.2	14
					Co / µF	0.083	0.65
II	60	28	3	0.021	Lo / mH	50	150
					Co / µF	0.083	0.65
I + II	60	28	93	0.651	Lo / mH	2	13
					Co / µF	0.08	0.636
9002/13-280-100-041							
I	60	28	97	0.679	Lo / mH	1.8	12
					Co / µF	0.083	0.65
II	60	28	0	0.021	Lo / mH	50	150
					Co / µF	0.083	0.65
I + II	60	28	100	0.7	Lo / mH	1.55	11
					Co / µF	0.08	0.635
9002/13-280-110-001							
I	60	28	107	0.749	Lo / mH	1.35	9.6
					Co / µF	0.083	0.65
II	60	28	3	0.021	Lo / mH	50	150
					Co / µF	0.083	0.65
I + II	60	28	110	0.77	Lo / mH	1.25	9
					Co / µF	0.08	0.635
9002/13-280-188-001							
I	60	28	185	1.295	Lo / mH	-	2.85
					Co / µF	-	0.65
II	60	28	3	0.021	Lo / mH	-	150
					Co / µF	-	0.65
I + II	60	28	188	1.316	Lo / mH	-	2.7
					Co / µF	-	0.635

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/22-016-383-111							
I	60	0.08	191.5	0.038	Lo / mH	0.54	4.4
					Co / µF	100	1000
II	60	0.08	191.5	0.038	Lo / mH	0.54	4.4
					Co / µF	100	1000
I + II	60	1.6	383	0.077	Lo / mH	0.16	0.96
					Co / µF	100	1000
9002/22-032-300-111							
I	60	1.6	150	0.06	Lo / mH	1.3	7
					Co / µF	100	1000
II	60	1.6	150	0.06	Lo / mH	1.3	7
					Co / µF	100	1000
I + II	60	3.2	300	0.12	Lo / mH	0.2	1.8
					Co / µF	100	1000
9002/22-048-442-111							
I	60	2.4	221	0.133	Lo / mH	0.4	3.19
					Co / µF	10	1000
II	60	2.4	221	0.133	Lo / mH	0.4	3.19
					Co / µF	100	1000
I + II	60	4.8	442	0.266	Lo / mH	0.12	0.54
					Co / µF	100	1000
9002/22-158-200-001							
I	60	7.9	100	0.198	Lo / mH	4	15
					Co / µF	8.8	115
II	60	7.9	100	0.198	Lo / mH	4	15
					Co / µF	8.8	115
I + II	60	15.8	200	3.95	Lo / mH	0.5	4
					Co / µF	0.478	2.88
9002/22-240-024-001							
I	60	12	12	0.04	Lo / mH	240	850
					Co / µF	1.41	9
II	60	12	12	0.04	Lo / mH	240	850
					Co / µF	1.41	9
I + II	60	24	24	0.08	Lo / mH	41	145
					Co / µF	0.125	0.93
9002/22-240-160-001							
I	60	12	80	0.24	Lo / mH	6	22
					Co / µF	1.41	9
II	60	12	80	0.24	Lo / mH	6	22
					Co / µF	1.41	9
I + II	60	24	160	0.48	Lo / mH	0.7	4
					Co / µF	0.125	0.93

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/33-280-000-001							
I	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.083	0.65
II	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.083	0.65
I + II	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.083	0.65
9002/34-280-000-01							
I	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.22	1.41
II	60	28	„0"		Lo / mH	1000	1000
					Co / µF	8.4	100
I + II	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.083	0.65
9002/77-093-040-001 (auch als 9002/22...)							
I	60	9.3	20	0.05	Lo / mH	90	330
					Co / µF	4.1	31
II	60	9.3	20	0.05	Lo / mH	90	330
					Co / µF	4.1	31
I + II	60	9.3	40	0.09	Lo / mH	23	87
					Co / µF	4.1	31
9002/77-093-300-001 (auch als 9002/22...)							
I	60	9.3	150	0.35	Lo / mH	1.3	7
					Co / µF	4.1	31
II	60	9.3	150	0.35	Lo / mH	1.3	7
					Co / µF	4.1	31
I + II	60	9.3	300	0.7	Lo / mH	0.2	1.8
					Co / µF	4.1	31
9002/77-100-400-001							
I	60	10	200	0.5	Lo / mH	0.5	4
					Co / µF	3	20.2
II	60	10	200	0.5	Lo / mH	0.5	4
					Co / µF	3	20.2
I + II	60	10	400	1	Lo / mH	0.15	0.8
					Co / µF	3	20.2
9002/77-150-300-001							
I	60	15	150	0.56	Lo / mH	1.3	7
					Co / µF	0.58	3.55
II	60	15	150	0.56	Lo / mH	1.3	7
					Co / µF	0.58	3.55
I + II	60	15	300	1.13	Lo / mH	0.2	1.8
					Co / µF	0.58	3.55

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/77-220-146-001							
I	50	22	73	0.4	Lo / mH	7	26
					Co / µF	0.165	1.14
II	50	22	73	0.4	Lo / mH	7	26
					Co / µF	0.165	1.14
I + II	50	22	146	0.8	Lo / mH	1.4	7.4
					Co / µF	0.165	1.14
9002/77-220-296-001							
I	50	22	148	0.81	Lo / mH	1.35	7.2
					Co / µF	0.165	1.14
II	50	22	148	0.81	Lo / mH	1.35	7.2
					Co / µF	0.165	1.14
I + II	50	22	296	1.63	Lo / mH	0.24	1.84
					Co / µF	0.165	1.14
9002/77-280-094-001							
I	60	28	47	0.33	Lo / mH	10.1	30
					Co / µF	0.083	0.65
II	60	28	47	0.33	Lo / mH	10.1	30
					Co / µF	0.083	0.65
I + II	60	28	94	0.66	Lo / mH	1.96	12.5
					Co / µF	0.083	0.65

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Limiting values L_o and C_o simultaneously in circuit

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/00-260-138-001 + 9002/11-260-138-001										
I	26	87	0.54	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	0.047	0.061	0.099	0.34	0.41	0.77
II	20	51	0.245	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.11	0.15	0.188	0.72	0.93	1.2
I + II	26	138	0.785	Lo / mH	-	-	-	5	1	0.1
				Co / µF	-	-	-	0.32	0.37	0.77
9002/00-120-024-001 + 9002/11-120-024-001										
I	12	12	0.04	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.34	0.63	1.1	1.8	3.5	6.6
II	12	12	0.04	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.34	0.63	1.1	1.8	3.5	6.6
I + II	12	24	0.07	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.26	0.62	1.1	1.6	3.4	6.6
9002/10-187-020-001										
I	9.33	20	0.05	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.48	1	1.8	2.8	5.7	11
II	9.33	20	0.05	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.48	1	1.8	2.8	5.7	11
I + II	18.7	20	0.09	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.48	0.21	0.25	0.69	1.3	1.5
9002/10-187-270-001										
I	9.33	270	0.63	Lo / mH	-	0.5	0.1	2	1	0.1
				Co / µF	-	0.88	1.7	3.6	4.8	11
II	9.33	270	0.63	Lo / mH	-	0.5	0.1	2	1	0.1
				Co / µF	-	0.88	1.7	3.6	4.8	11
I + II	18.7	270	1.26	Lo / mH	-	0.2	0.1	-	1	0.1
				Co / µF	-	0.15	0.19	-	1	1.3
9002/10-210-030-001										
I	10.5	30	0.08	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.27	0.8	1.4	2	4.5	8.7
II	10.5	30	0.08	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.27	0.8	1.4	2	4.5	8.7
I + II	21	30	0.16	Lo / mH	20	1	0.1	50	1	0.1
				Co / µF	0.13	0.13	0.188	0.51	0.79	1.1
9002/00-280-186-001 + 9002/11-280-186-001										
I	28	93	0.65	Lo / mH	-	1	0.1	10	1	0.1
				Co / µF	-	0.052	0.083	0.25	0.35	0.65
II	28	93	0.65	Lo / mH	-	1	0.1	10	1	0.1
				Co / µF	-	0.052	0.083	0.25	0.35	0.65
I + II	28	186	1.3	Lo / mH	-	-	-	-	1	0.1
				Co / µF	-	-	-	-	0.34	0.551

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/11-130-360-001										
I	13	321	1.04	Lo / mH	-	0.2	0.1	-	1	0.1
				Co / µF	-	0.64	0.83	-	2.3	5.4
II	1.6	39	0.016	Lo / mH	20	1	0.1	50	1	0.1
				Co / µF	15	36	75	78	210	640
I + II	13	360	1.17	Lo / mH	-	0.2	0.1	-	1	0.1
				Co / µF	-	0.62	0.82	-	2.2	5.3
9002/11-137-029-001										
I	13.7	14.5	0.05	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.25	0.48	0.79	1.3	2.6	5
II	13.7	14.5	0.05	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.25	0.48	0.79	1.3	2.6	5
I + II	13.7	29	0.1	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.17	0.47	0.79	1.2	2.6	5
9002/11-280-112-001										
I	28	109	0.76	Lo / mH	-	-	0.05	5	1	1
				Co / µF	-	-	0.083	0.23	0.34	0.65
II	28	3	0.02	Lo / mH	50	1	0.1	50	1	-
				Co / µF	0.062	0.075	0.083	0.34	0.41	-
I + II	28	112	0.78	Lo / mH	-	-	-	5	1	0.1
				Co / µF	-	-	-	0.28	0.36	0.551
9002/11-280-244-001										
I	28	184	1.29	Lo / mH	-	-	-	-	1	0.1
				Co / µF	-	-	-	-	0.3	0.65
II	28	60	0.42	Lo / mH	-	1	0.1	10	1	0.1
				Co / µF	-	0.059	0.083	0.28	0.37	0.65
I + II	28	244	1.71	Lo / mH	-	-	-	-	1	0.05
				Co / µF	-	-	-	-	0.28	0.551
9002/11-280-293-001 + 9002/11-280-293										
I	28	89	0.63	Lo / mH	-	1	1	10	1	0.1
				Co / µF	-	0.053	0.083	0.25	0.35	0.65
II	9.56	180	0.43	Lo / mH	-	1	0.1	5	1	0.1
				Co / µF	-	0.72	1.6	2.7	4.9	10
I + II	28	269	1.05	Lo / mH	-	-	-	10	1	-
				Co / µF	-	-	-	0.24	0.36	-
9002/11-199-030-001										
I	19.9	15	0.075	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.15	0.17	0.22	0.8	0.98	1.3
II	19.9	15	0.075	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.15	0.17	0.22	0.8	0.98	1.3
I + II	19.9	30	0.15	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.14	0.16	0.22	0.77	0.97	1.3

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/13-199-225-001										
I	19.9	222	1.1	Lo / mH	-	0.2	0.1	-	1	0.1
				Co / µF	-	0.14	0.18	-	0.79	1.2
II	19.9	3	0.015	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.17	0.17	0.22	0.83	0.99	1.3
I + II	19.9	225	1.12	Lo / mH	-	0.2	0.1	2	1	0.1
				Co / µF	-	0.14	0.18	0.79	0.79	1.2
9002/13-252-121-041										
I	25.2	118	0.74	Lo / mH	-	0.5	0.1	5	1	0.1
				Co / µF	-	0.074	0.107	0.35	0.41	0.81
II	25.2	0	0.02	Lo / mH	10	1	0.1	50	1	0.1
				Co / µF	0.083	0.09	0.107	0.43	0.5	0.82
I + II	25.2	121	0.76	Lo / mH	-	0.5	0.1	5	1	0.1
				Co / µF	-	0.088	0.088	0.36	0.43	0.683
9002/13-280-093-001										
I	28	90	0.63	Lo / mH	-	1	0.1	10	1	0.1
				Co / µF	-	0.052	0.083	0.25	0.35	0.65
II	28	3	0.021	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.062	0.075	0.083	0.34	0.41	0.65
I + II	28	93	0.651	Lo / mH	-	-	-	5	1	0.1
				Co / µF	-	-	-	0.25	0.36	0.551
9002/13-280-100-041										
I	28	97	0.679	Lo / mH	-	0.5	0.1	10	1	0.1
				Co / µF	-	0.067	0.083	0.24	0.35	0.65
II	28	0	0.021	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.062	0.075	0.083	0.34	0.41	0.65
I + II	28	100	0.7	Lo / mH	-	-	-	5	1	0.1
				Co / µF	-	-	-	0.28	0.36	0.551
9002/13-280-110-001										
I	28	107	0.749	Lo / mH	-	-	0.1	5	1	0.1
				Co / µF	-	-	0.083	0.23	0.34	0.65
II	28	3	0.021	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.062	0.075	0.083	0.34	0.41	0.65
I + II	28	110	0.77	Lo / mH				5	1	0.1
				Co / µF				0.28	0.36	0.551
9002/13-280-188-001										
I	28	185	1.295	Lo / mH	-	-	-	-	1	0.1
				Co / µF	-	-	-	-	0.3	0.65
II	28	3	0.021	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.062	0.075	0.083	0.34	0.41	0.65
I + II	28	188	1.316	Lo / mH	-	-	-	5	1	0.1
				Co / µF	-	-	-	0.28	0.36	0.551

3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/22-016-383-111										
I	0.08	191.5	0.038	Lo / mH	-	1	0.1	5	1	0.1
				Co / µF	-	100	100	400	900	1000
II	0.08	191.5	0.038	Lo / mH	-	1	0.1	5	1	0.1
				Co / µF	-	100	100	400	900	1000
I + II	1.6	383	0.077	Lo / mH	-	0.5	0.1	2	1	0.1
				Co / µF	-	26	67	100	170	620
9002/22-032-300-111										
I	1.6	150	0.06	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	20	29	73	72	200	640
II	1.6	150	0.06	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	20	29	73	72	200	640
I + II	3.2	300	0.12	Lo / mH		0.5	0.1	2	1	0.1
				Co / µF		7.3	15	30	41	110
9002/22-048-442-111										
I	2.4	221	0.133	Lo / mH		1	0.1	5	1	0.1
				Co / µF		10	29	36	80	220
II	2.4	221	0.133	Lo / mH		1	0.1	5	1	0.1
				Co / µF		10	29	36	80	220
I + II	4.8	442	0.266	Lo / mH		0.2	0.1		1	0.1
				Co / µF		4.4	6.1		16	43
9002/22-158-200-001										
I	7.9	100	0.198	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	1	1.3	2.5	3.9	7.6	16
II	7.9	100	0.198	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	1	1.3	2.5	3.9	7.6	16
I + II	15.8	200	3.95	Lo / mH		0.5	0.1	2	1	0.1
				Co / µF		0.34	0.38	1.4	1.7	2.6
9002/22-240-024-001										
I	12	12	0.04	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.34	0.63	1.1	1.8	3.5	6.6
II	12	12	0.04	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.34	0.63	1.1	1.8	3.5	6.6
I + II	24	24	0.08	Lo / mH	50	1	0.1	50	1	0.1
				Co / µF	0.26	0.62	1.1	1.6	3.4	6.6
9002/22-240-160-001										
I	12	80	0.24	Lo / mH	5	1	0.1	10	1	0.1
				Co / µF	0.33	0.57	1.1	1.8	3.3	6.6
II	12	80	0.24	Lo / mH	5	1	0.1	10	1	0.1
				Co / µF	0.33	0.57	1.1	1.8	3.3	6.6
I + II	24	160	0.48	Lo / mH			0.02	2	1	0.1
				Co / µF			0.125	0.37	0.85	0.93

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3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/33-280-000-001										
I	28	„0"		Lo / mH	50-5	1	0.1	50-5	1	0.1
				Co / µF	0.062	0.075	0.083	0.33	0.41	0.65
II	28	„0"		Lo / mH	50-5	1	1	50-5	1	0.1
				Co / µF	0.062	0.075	0.083	0.33	0.41	0.65
I + II	28	„0"		Lo / mH	50-5	1	1	50-5	1	0.1
				Co / µF	0.062	0.075	0.083	0.33	0.41	0.65
9002/34-280-000-01										
I	28	„0"		Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.82	0.98	1.3	0.82	0.98	1.3
II	28	„0"		Lo / mH	50	1	0.1	10	1	0.1
				Co / µF	43	7.9	16	5.1	7.9	16
I + II	28	„0"		Lo / mH	50-5	1	0.1	50-5	1	0.1
				Co / µF	0.062	0.075	0.083	0.33	0.41	0.65
9002/77-093-040-001 (auch als 9002/22...)										
I	9.3	20	0.05	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.68	1	1.8	3.6	5.7	11
II	9.3	20	0.05	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.68	1	1.8	3.6	5.7	11
I + II	9.3	40	0.09	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.59	1	1.8	3.4	5.7	11
9002/77-093-300-001 (auch als 9002/22...)										
I	9.3	150	0.35	Lo / mH	2	1	0.1	5	1	0.1
				Co / µF	0.58	0.82	1.8	3.1	5.3	11
II	9.3	150	0.35	Lo / mH	2	1	0.1	5	1	0.1
				Co / µF	0.58	0.82	1.8	3.1	5.3	11
I + II	9.3	300	0.7	Lo / mH		0.5	0.1	2	1	0.1
				Co / µF		0.83	1.7	3.4	4.7	11
9002/77-100-400-001										
I	10	200	0.5	Lo / mH		1	0.1	5	1	0.1
				Co / µF		0.62	1.5	2.3	4.4	9.4
II	10	200	0.5	Lo / mH		1	0.1	5	1	0.1
				Co / µF		0.62	1.5	2.3	4.4	9.4
I + II	10	400	1	Lo / mH		0.2	0.1		1	0.1
				Co / µF		1	1.4		3.7	9.2
9002/77-150-300-001										
I	15	150	0.56	Lo / mH		1	0.1	5	1	0.1
				Co / µF		0.31	0.54	1.2	2	3.55
II	15	150	0.56	Lo / mH		1	0.1	5	1	0.1
				Co / µF		0.31	0.54	1.2	2	3.55
I + II	15	300	1.13	Lo / mH		0.2	0.1		1	0.1
				Co / µF		0.48	0.48		1.8	3.5

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3. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053

PTB 01 ATEX 2053 X

Type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/77-220-146-001										
I	22	73	0.4	Lo / mH	5	1	0.1	10	1	0.1
				Co / µF	0.09	0.096	0.165	0.55	0.63	1
II	22	73	0.4	Lo / mH	5	1	0.1	10	1	0.1
				Co / µF	0.09	0.096	0.165	0.55	0.63	1
I + II	22	146	0.8	Lo / mH		0.5	0.1	5	1	0.1
				Co / µF		0.091	0.16	0.56	0.57	0.99
9002/77-220-296-001										
I	22	148	0.81	Lo / mH		0.5	0.1	5	1	0.1
				Co / µF		0.09	0.16	0.55	0.56	0.99
II	22	148	0.81	Lo / mH		0.5	0.1	5	1	0.1
				Co / µF		0.09	0.16	0.55	0.56	0.99
I + II	22	296	1.63	Lo / mH					1	0.1
				Co / µF					0.45	0.93
9002/77-280-094-001										
I	28	47	0.33	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.042	0.063	0.083	0.29	0.38	0.65
II	28	47	0.33	Lo / mH	10	1	0.1	10	1	0.1
				Co / µF	0.042	0.063	0.083	0.29	0.38	0.65
I + II	28	94	0.66	Lo / mH		0.5	0.1	10	1	0.1
				Co / µF		0.067	0.083	0.25	0.35	0.65

All circuits are interconnected and electrically connected to ground by their reference conductors.

Applied standards

IEC 60079-0:2007 **EN 60079-11:2007** **EN 60079-15:2005** **EN 61241-11:2006**

Assessment and test report: PTB Ex 08-28236

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, December 1, 2008

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

4. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053 X

(Translation)

Equipment: Safety barrier type 9002/..-...-...-..1

Marking: Ⓔx **II 3(1) G Ex nA [ia Ga] IIC T4 Gc AND II (1) D [Ex ia Da] IIIC**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30, 74638 Waldenburg, Deutschland

Description of supplements and modifications

This 4th Supplement serves for type writing error correction of the documentation associated with the 3rd Supplement.

No further changes apply.

Electrical Data:

intrinsically safe circuits (terminals 3 and 4)

explosion protection type Intrinsic Safety Ex ia IIB/IIC Ga resp. Ex ia IIIC Da, source characteristic linear, maximum values according to the following tables:

Maximum values L_o and C_o alternatively within the circuit

type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/00-260-138-001 + 9002/11-260-138-001							
I	60	26	87	0.54	Lo / mH	2.7	15.5
					Co / µF	0.099	0.77
II	60	20	51	0.245	Lo / mH	14	54
					Co / µF	0.22	1.41
I + II	60	26	138	0.785	Lo / mH	0.81	5.1
					Co / µF	0.087	0.67

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4. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053 X

type / channel	T_a [°C]	U_o [V]	I_o [mA]	P_o [mW]		IIC	IIB
9002/22-016-383-111							
I	60	0.8	191.5	0.038	Lo / mH	0.54	4.4
					Co / µF	100	1000
II	60	0.8	191.5	0.038	Lo / mH	0.54	4.4
					Co / µF	100	1000
I + II	60	1.6	383	0.077	Lo / mH	0.16	0.96
					Co / µF	100	1000
9002/22-158-200-001							
I	60	7.9	100	0.198	Lo / mH	4	15
					Co / µF	8,8	115
II	60	7.9	100	0.198	Lo / mH	4	15
					Co / µF	8.8	115
I + II	60	15.8	200	0.395	Lo / mH	0.5	4
					Co / µF	0.478	2.88
9002/34-280-000-001							
I	60	20	„0"		Lo / mH	1000	1000
					Co / µF	0.22	1.41
II	60	8	„0"		Lo / mH	1000	1000
					Co / µF	8.4	100
I + II	60	28	„0"		Lo / mH	1000	1000
					Co / µF	0.083	0.65

Maximum values L_o and C_o commonly within the circuit

type / channel	U_o [V]	I_o [mA]	P_o [mW]		IIC			IIB		
9002/22-016-383-111										
I	0.8	191.5	0.038	Lo / mH	-	1	0.1	5	1	0.1
				Co / µF	-	100	100	400	900	1000
II	0.8	191.5	0.038	Lo / mH	-	1	0.1	5	1	0.1
				Co / µF	-	100	100	400	900	1000
I + II	1.6	383	0.077	Lo / mH	-	0.5	0.1	2	1	0.1
				Co / µF	-	26	67	100	170	620
9002/22-158-200-001										
I	7.9	100	0.198	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	1	1.3	2.5	3.9	7.6	16
II	7.9	100	0.198	Lo / mH	2	1	0.1	10	1	0.1
				Co / µF	1	1.3	2.5	3.9	7.6	16
I + II	15.8	200	0.395	Lo / mH		0.5	0.1	2	1	0.1
				Co / µF		0.34	0.38	1.4	1.7	2.6
9002/34-280-000-001										
I	20	„0"		Lo / mH	10	1	0,1	10	1	0.1
				Co / µF	0.82	0.98	1.3	0.82	0.98	1.3
II	8	„0"		Lo / mH	50	1	0.1	10	1	0.1
				Co / µF	43	7.9	16	5.1	7.9	16
I + II	28	„0"		Lo / mH	50-5	1	0.1	50-5	1	0.1
				Co / µF	0.062	0.075	0.083	0.33	0.41	0.65

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4. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053 X

Applied standards

IEC 60079-0:2007; EN 60079-11:2007; EN 60079-15:2005; EN 61241-11:2006

Assessment and test report: PTB Ex 09-29139

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, May 13, 2009

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

5. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053 X

(Translation)

Equipment: Safety barrier, type 9002/..-...-...-..1

Marking:  **II 3 (1) G Ex nA [ia Ga] IIC T4 Gc AND II (1) D [Ex ia Da] IIIC**

Manufacturer: R. STAHL Schaltgeräte GmbH

Address: Am Bahnhof 30, 74638 Waldenburg, Germany

Description of supplements and modifications

The electrical data of type 9002/22-032-300-111 are extended by those for connection of an active intrinsically safe source to terminals 3 and 4 (e.g. an RS 485 interface) without technical modification of the design.

Electrical data

Non-intrinsically safe circuits (terminals 1 and 2)	type of protection Non-Sparking Ex nA Gc, safety-relevant maximum voltage as an associated apparatus: U_m = 253 V
Intrinsically safe circuit (terminals 3 and 4)	type of protection Intrinsic Safety Ex ia IIB/IIC Ga, Maximum values: U_o = ±3.2 V I_o = ±300 mA P_o = 120 mW U_i = ±4.2 V I_i = ±150 mA P_i = 160 mW the effective internal inductance L_i and capacitance C_i are negligibly low

All circuits are interconnected and electrically connected to ground by their reference conductors.

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5. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2053 X

Additional Note:

The following values of the permissible inductance L_o and capacitance C_o apply in the (field) circuit for the interconnection of the safety barrier and an interface having the abovementioned active input values:

	IIC		IIB		
L_o [mH]	0.37	0.1	1.5	0.5	0.1
C_o [µF]	1.8	3	7.2	11	19

Possibly existing internal inductances L_i and capacitances C_i of the interface are to be subtracted.

Applied standards

IEC 60079-0:2007; EN 60079-11:2007; EN 60079-15:2005; EN 61241-11:2006

Assessment and test report: PTB Ex 10-20060

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, July 21, 2010

EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE

Wir *(we; nous)*

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany

9002/..-...-...-..1

erklären in alleiniger Verantwortung, dass das Produkt
hereby declare in our sole responsibility, that the product
déclarons, sous notre seule responsabilité, que le produit

Sicherheitsbarriere
Safety Barrier
Barrière de Securité

mit der *(under; avec)*
EG-Baumusterprüfbescheinigung:
EC-Type Examination Certificate:
Attestation d'examen CE de type:

PTB 01 ATEX 2053 X

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie *terms of the directive* *prescription de la directive*	**Nummer sowie Ausgabedatum der Norm** *Number and date of issue of the standard* *Numéro ainsi que date d'émission de la norme*
94/9/EG: ATEX-Richtlinie *94/9/EC: ATEX Directive* *94/9/CE: Directive ATEX*	IEC 60079-0: 2007 EN 60079-11: 2007 EN 60079-15: 2005 EN 61241-11: 2006
2004/108/EG: EMV-Richtlinie *2004/108/EC: EMC Directive* *2004/108/CE: Directive CEM*	EN 61326-1: 2006

Qualitätssicherung Produktion:
Production Quality Assessment:
Assurance Qualité Production:
BVS 07 ATEX ZQS/E142

Kenn-Nr. der benannten Stelle / *Notified Body number / N° de l'organisme de certification:* 0158

Waldenburg, 23.09.2009

Ort und Datum
Place and date
Lieu et date

i.V.

J.-P. Rückgauer
Leiter Entwicklung und Technik
Director Design and Technology
Directeur Développement et Technique

i.V.

Dr. S. Jung
Leiter Qualitätsmanagement
Director Quality Management Dept.
Directeur Dept. Assurance de Qualité