

Braunschweig und Berlin

6. 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:

(EX) 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 safety-related specification applies without changes. It is, however, again represented as a summary of the current state.

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

Overall conformity is confirmed in accordance with the currently applicable standards mentioned below.

The terminals for the equipotential bonding conductor are infallibly connected to the local equipotential bonding system.

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



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Elektrische Daten

Non-intrinsically safe circuits (terminals 1 and 2)

type of protection Non-Sparking Ex nA Gc, safety-related maximum voltage for application as associated apparatus:

 $U_{\rm m} = 253 \text{ V}$

Nominal data according to the following table:

	T 1001	Cha	nnel l	Cha	Channel II			
Туре	T _a [°C]	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	+2035	80	+22	80			
9002/13-280-093-001	60	+24	67	+24	67			
9002/13-280-100-041	60	+2035	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			
9002/77-220-296-001	50	±18	80	±18	80			
9002/77-280-094-001	60	±24	33	±24	33			

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Intrinsically safe circuits (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 table

Limiting values Lo and Co alternatively in the circuit

Type / Channel	T _a [°C]	U ₀ [V]	lo [mA]	Po [W]		IIC	IIB
9002/00-260-138-001 + 9002/11-260-138-001							
1	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 Co/µF	0.22	1.41
+	60	26	138	0.785	Lo/mH Co/µF	0.81	5.1 0.67
9002/00-120-024-001 + 9002/11-120-024-001			<u> </u>	<u> </u>	OO / µI	10.007	0.07
	60	12	12	0.04	Lo/mH	240	850
	- 00	14	14-	0.04	Co / µF	1.41	9
1	60	12	12	0.04	Lo / mH	240	850
	- 00	<u>'</u>		0.01	Co / µF	1.41	9
+	60	12	24	0.07	Lo / mH	63	230
		12	27	0.07	Co / µF	1.1	7.1
9002/10-187-020-001							
	60	9.33	20	0.05	Lo / mH	90	330
1	60	9.33	20	0.05	Co / µF	3.9	29
	60	9.33	20	0.05	Lo / mH	90	330
		8.55	20	0.00	Co / µF	3.9	29
+	60	18.7	20	0.09	Lo / mH	90	330
		10,7		0.00	Co / µF	0.27	1.64
9002/10-187-270-001							
	60	9.33	270	0.63	Lo/mH	0.23	2.2
<u>'</u>	00	9.55	270	0.00	Co / µF	3.9	29
	60	9.33	270	0.63	Lo / mH	0.23	2.2
	00	0.00	210	0.00	Co / µF	3.9	29
+	60	18.7	270	1.26	Lo / mH	0.23	2.2
		10.7			Co / µF	0.27	1.64
9002/10-210-030-001							
1	60	10.5	30	0.08	Lo/mH	40	150
1		10.5	30	0.00	Co / µF	2.41	16.8
	60	10.5	30	0.08	Lo/mH	40	150
		10.5	30	0.00	Co / µF	2.41	16.8
+	60	21	30	0.16	Lo / mH	40	150
			150	13.13	Co / µF	0.188	1.27
9002/00-280-186-001 + 9002/11-280-186-001							
l _t	60	28	93	0.65	Lo/mH	2	13
•					Co / µF	0.083	0.65
[[60	28	93	0.65	Lo / mH	2	13
					Co / µF	0.083	0.65
1+11	60	28	186	1.3	Lo / mH	-	2.8
		<u> </u>	1	1	Co / µF	-	0.551

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Type / Channel	Ta [°C]	U ₀ [V]	I _O [mA]	P ₀ [W]		IIC	IIB
9002/11-130-360-001							
1	60	13	321	1.04	Lo/mH	0.19	1.6
	00	10	021	1.0-1	Co / µF	1	6.2
II	60	1.6	39	0.016	Lo / mH	24	91
					Co/µF	100 0.17	1000
+	60	13	360	1.17	Lo/mH Co/µF	0.17	5
9002/11-137-029-001					1007 [4.		
			T	f	Lo / mH	160	560
1	60	13.7	14.5	0.05	Co / µF	0.79	5
		40.7	445	0.05	Lo / mH	160	560
11	60	13.7	14.5	0.05	Co/µF	0.79	5
	60	13.7	29	0.1	Lo/mH	43	160
+	60	13.7	29	0.1	Co / µF	0.67	4.18
9002/11-280-112-001							
	60	20	100	0.76	Lo/mH	1.3	9
	60	28	109	0.76	Co / µF	0.083	0.65
	60	28	3	0.02	Lo / mH	50	150
	00	20	3	0.02	Co / µF	0.083	0.65
] +	60	28	112	0.78	Lo / mH	0.76	8.4
9002/11-280-244-001					Co / µF	0.065	0.551
9002/11-280-244-001				1	11 . /11	1	2.9
1	60	28	184	1.29	Lo / mH Co / µF	-	0.65
					Lo / mH	-	25
11	60	28	60	0.42	Co / µF		0.65
					Lo / mH	_	1.1
+	60	28	244	1.71	Co / µF	-	0.62
9002/11-280-293-001 + 9002/11-280-293							
		00	00	0.00	Lo / mH	2.2	14
1	60	28	89	0.63	Co / µF	0.083	0.65
11	60	0.50	180	0.43	Lo / mH	0.6	5
11	60	9.56	100	0.43	Co / µF	3.6	26
+	60	28	269	1.05	Lo/mH	-	0.56
	00	20	200	1.00	Co / µF	-	0.62
9002/11-199-030-001							
	60	19.9	15	0.075	Lo / mH	160	560
	00	19.9	10	0.075	Co / µF	0.223	1.42
	60	19.9	15	0.075	Lo/mH	160	560
П	- 00	10.0	'	0.070	Co / µF	0.223	1.42
+	60	19.9	30	0.15	Lo / mH	40	150
		1			Co / µF	0.223	1.42



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Type / Channel	T _a [°C]	U ₀ [V]	lo [mA]	Po [W]		IIC	IIB
9002/13-199-225-001							
	60	19.9	222	1.1	Lo / mH	0.39	3.18
	00	10.0			Co / µF	0.223	1.42
11	60	19.9	3	0.015	Lo/mH Co/µF	1000 0.223	1000
					Lo / mH	0.223	3.15
1 + 11	60	19.9	225	1.12	Co / µF	0.213	1.38
9002/13-252-121-041							
	60	25.2	118	0.74	Lo/mH	1.3	7.4
I	00	20.2	110	0.74	Co / µF	0.107	0.82
11	60	25.2	0	0.02	Lo/mH	50	150
	100	20.2	ļ	0.02	Co / µF	0.107	0.82
1+11	60	25.2	121	0.76	Lo/mH	1.25	7.35
				00	Co / µF	0.104	0.8
9002/13-280-093-001							
	60	28	90	0.63	Lo / mH	2.2	14
	00	20	90	0.03	Co / µF	0.083	0.65
	60	28	3	0.021	Lo/mH	50	150
	100	20	0	0.021	Co/µF	0.083	0.65
+	60	28	93	0.651	Lo/mH	2	13
1 ' 11		120	00	0.001	Co / µF	0.08	0.636
9002/13-280-100-041							
	60	28	97	0.679	Lo/mH	1.8	12
		20	01	0.070	Co / µF	0.083	0.65
11	60	28	0	0.021	Lo/mH	50	150
11	00	20	ļ	0.021	Co / µF	0.083	0.65
1+11	60	28	100	0.7	Lo / mH	1.55	11
					Co / µF	0.08	0.635
9002/13-280-110-001							
	60	28	107	0.749	Lo/mH	1.35	9.6
	00	20	107	0.748	Co / µF	0.083	0.65
11	60	28	3	0.021	Lo / mH	50	150
	00	20	J	0.021	Co / µF	0.083	0.65
+	60	28	110	0.77	Lo / mH	1.25	9
E. H	00	20	110	0.77	Co / µF	0.08	0.635
9002/13-280-188-001							
1	60	28	185	1.295	Lo/mH	_	2.85
	100	20	100	1.200	Co / µF	-	0.65
	60	28	3	0.021	Lo / mH	<u> </u>	150
II .		20	ļ <u> </u>	0.021	Co / µF	 -	0.65
1 + 11	60	28	188	1.316	Lo/mH	-	2.7
			1		Co / µF	_	0.635



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Type / Channel	T _a [°C]	U ₀ [V]	Io [mA]	Po [W]		IIC	IIB
9002/22-016-383-111							
	60	0.8	191.5	0.038	Lo/mH	0.54	4.4
•					Co / µF	100	1000
	60	0.8	191.5	0.038	Lo/mH Co/µF	0.54 100	1000
					Lo/mH	0.16	0.96
+	60	1.6	383	0.077	Co / µF	100	1000
9002/22-032-300-111							
1	60	1.6	150	0.06	Lo/mH	1.3	7
I	- 00	1.0	100	0.00	Co / µF	100	1000
	60	1.6	150	0.06	Lo / mH	1.3	7
					Co / µF	100 0.2	1.8
+	60	3.2	300	0.12	Lo/mH Co/µF	100	1000
9002/22-048-442-111	,				<u> CO / μι</u>	1100	11000
					Lo / mH	0.4	3.19
1	60	2.4	221	0.133	Co / µF	100	1000
	00	-0.4	004	0.400	Lo/mH	0.4	3.19
11	60	2.4	221	0.133	Co / µF	100	1000
+	60	4.8	442	0.266	Lo / mH	0.12	0.54
	00	7.0	772	0.200	Co / µF	100	1000
9002/22-158-200-001							
I	60	7.9	100	0.198	Lo / mH	4	15
1		1.0	100	0.700	Co / µF	8.8	115
П	60	7.9	100	0.198	Lo / mH	8.8	15 115
		-			Co / µF Lo / mH	0.5	4
1 + 11	60	15.8	200	0.395	Co / µF	0.478	2.88
9002/22-240-024-001			1	I	1 00 г мг		.1
		1	T.,		Lo / mH	240	850
	60	12	12	0.04	Co / µF	1.41	9
11	60	12	12	0.04	Lo / mH	240	850
ll	- 00	12	12	0.04	Co / µF	1.41	9
+	60	24	24	0.08	Lo / mH	41	145
9002/22-240-160-001					Co / μF	0.125	0.93
3002/22-240-100-001			1	T	1 - 1 -	T.C.	100
1	60	12	80	0.24	Lo/mH Co/µF	1.41	9
					Lo / mH	6	22
II	60	12	80	0.24	Co / µF	1.41	9
		0.4	400	0.40	Lo / mH	0.7	4
1 + 11	60	24	160	0.48	Co / µF	0.125	0.93



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Type / Channel	T _a [°C]	U ₀ [V]	lo [mA]	Po [W]		IIC	IIB
9002/33-280-000-001							
1	60	28	"0"		Lo / mH	1000	1000
1		20	,,,,		Co / µF	0.083	0.65
	60	28	,,0"		Lo/mH	1000	1000
			" -		Co / µF	0.083	0.65
1 + 11	60	28	"0"		Lo/mH Co/µF	1000 0.083	1000 0.65
9002/34-280-000-001			1		100, 11.	10.000	
•		00	0"	T	Lo / mH	1000	1000
	60	20	"0"		Co/µF	0.22	1.41
II	60	8	"0"		Lo / mH	1000	1000
11	00	٥	"0		Co/µF	8.4	100
+	60	28	"0"		Lo / mH	1000	1000
	00	20	"0		Co / µF	0.083	0.65
9002/77-093-040-001 (auch als 9002/22)							
	60	9.3	20	0.05	Lo / mH	90	330
I	00	9.5	20	0.00	Co / µF	4.1	31
	60	9.3	20	0.05	Lo/mH	90	330
11	- 00	0.0	20	0.00	Co / µF	4.1	31
1+11	60	9.3	40	0.09	Lo / mH	23	87 31
9002/77-093-300-001 (auch als 9002/22)			L		Co / µF	4.1	31
,			T		Lo / mH	1.3	7
1	60	9.3	150	0.35	Co / µF	4.1	31
			450	0.05	Lo / mH	1.3	7
	60	9.3	150	0.35	Co / µF	4.1	31
1 . 11	60	0.3	300	0.7	Lo/mH	0.2	1.8
1+11	60	9.3	300	0.7	Co / µF	4.1	31
9002/77-100-400-001							
1	00	10	200	0.5	Lo / mH	0.5	4
	60	10	200	0.5	Co / µF	3	20.2
П	60	10	200	0.5	Lo/mH	0.5	4
II	00	10	200	0.5	Co / µF	3	20.2
+	60	10	400	1	Lo / mH	0.15	0.8
1 7 11		10	1400	<u> </u>	Co / µF	3	20.2
9002/77-150-300-001							
•	60	15	150	0.56	Lo/mH	1.3	7
l	00	10	100	0.00	Co / µF	0.58	3.55
11	60	15	150	0.56	Lo/mH	1.3	7
11	00	10	100	0.00	Co / µF	0.58	3.55
+	60	15	300	1.13	Lo/mH	0.2	1.8
				'''	Co / µF	0.58	3.55



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Type / Channel	T _a [°C]	U ₀ [V]	lo [mA]	Po [W]		IIC	IIB
9002/77-220-146-001							
		00	70	0.4	Lo / mH	7	26
[1	50	22	73	0.4	Co / µF	0.165	1.14
11	50	22	73	0.4	Lo / mH	7	26
	50	22	13	0.4	Co / µF	0.165	1.14
	50	22	146	0.8	Lo / mH	1.4	7.4
+	50	22	140	0.6	Co / µF	0.165	1.14
9002/77-220-296-001							
		00	440	0.04	Lo/mH	1.35	7.2
1	50	22	148	0.81	Co / µF	0.165	1.14
	50	00	440	0.04	Lo/mH	1.35	7.2
11	50	22	148	0.81	Co/µF	0.165	1.14
1.1	50	22	206	1.63	Lo/mH	0.24	1.84
+	50	22	296	1.03	Co / µF	0.165	1.14
9002/77-280-094-001							
	00	00	47	0.00	Lo / mH	10.1	30
	60	28	47	0.33	Co / µF	0.083	0.65
	60	20	47	0.22	Lo / mH	10.1	30
	60	28	47	0.33	Co / µF	0.083	0.65
	60	20	04	0.66	Lo/mH	1.96	12.5
1 +	60	28	94	0.66	Co / µF	0.083	0.65



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

Limiting values L_{o} and C_{o} existing in combination in the circuit

Type / Channel	U _o [V]	lo [mA]	Po [W]			IIC			liΒ	
9002/00-260-138-001 + 9002/11-260-138-001										
1	26	87	0.54	Lo / mH	0.047	0.061	0.1	0.34	0.41	0.1
				Co/µF Lo/mH	10	1	0.099	10.34	1	0.77
	20	51	0.245	Co / µF	0.11	0.15	0.188	0.72	0.93	1.2
+	26	138	0.785	Lo/mH	-	-	-	5 0.32	0.37	0.1
9002/00-120-024-001 + 9002/11-120-024-001			1	Co / µF	+	-	**	0.32	10.37	10.77
	12	12	0.04	Lo/mH Co/µF	50 0.34	0.63	0.1	50 1.8	3.5	0.1 6.6
11	40	40	0.04	Lo / mH	50	1	0.1	50	1	0.1
	12	12	0.04	Co / µF	0.34	0.63	1.1	1.8	3.5	6.6
+	12	24	0.07	Lo / mH	50	1	0.1	50	1	0.1
	· -		<u> </u>	Co / µF	0.26	0.62	1.1	1.6	3.4	6.6
9002/10-187-020-001										
1	9.33	20	0.05	Lo / mH	50	1	0.1	50	1	0.1
	9.33	20	0.05	Co / µF	0.48	1	1.8	2.8	5.7	11
	9.33	20	0.05	Lo / mH	50	1	0.1	50	1 5 7	0.1
**				Co/µF	0.48 50	1	1.8 0.1	2.8	5.7	0.1
+	18.7	20	0.09	Lo/mH Co/µF	0.48	0.21	0.25	0.69	1.3	1.5
9002/10-187-270-001			<u>- L</u>	1	1 3	1.5:				
	9.33	270	0.63	Lo/mH	-	0.5	0.1	2	1	0.1
	9.55	210	0.03	Co/µF	-	0.88	1.7	3.6	4.8	11
	9.33	270	0.63	Lo/mH	-	0.5	0.1	3.6	4.8	0.1
				Co/µF Lo/mH	-	0.88	0.1	3.0	1	0.1
1+11	18.7	270	1.26	Co / µF	<u>-</u>	0.15	0.19	-	1	1.3
9002/10-210-030-001				1			-1		_	
	10.5	30	0.08	Lo/mH	50	1	0.1	50	1	0.1
I	10.0	100	0,00	Co / µF	0.27	0.8	1.4	2	4.5	8.7
H	10.5	30	0.08	Lo / mH Co / µF	50 0.27	0.8	0.1 1.4	50	4.5	0.1 8.7
			 	Lo / mH	20	1	0.1	50	1	0.1
+	21	30	0.16	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 0.05	0.1
			1	Co/µF	-	0.052	0.083	0.25	0.35	0.65
11	28	93	0.65	Lo/mH Co/µF	 -	0.052	0.083	0.25	0.35	0.65
		† ·	1	Lo/mH	-	-	-	-	1	0.1
+	28	186	1.3	Co / µF	-	-	-	-	0.34	0.551



Braunschweig und Berlin

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

Type / Channel	U ₀ [V]	lo [mA]	Po [W]			IIC			IIB	
9002/11-130-360-001										
1	13	321	1.04	Lo/mH	-	0.2	0.1	-	1	0.1
	10	021	1.04	Co / µF	-	0.64	0.83	-	2.3	5.4
II	1.6	39	0.016	Lo/mH Co/µF	20 15	36	0.1 75	50 78	210	0.1 640
1+11	13	360	1.17	Lo/mH	-	0.2	0.1	-	1	0.1
			1,1,	Co / µF	-	0.62	0.82	-	2.2	5.3
9002/11-137-029-001										
	13.7	14.5	0.05	Lo/mH Co/µF	50 0.25	0.48	0.1	50 1.3	2.6	0.1 5
				Lo/mH	50	1	0.13	50	1	0.1
II	13.7	14.5	0.05	Co / µF	0.25	0.48	0.79	1.3	2.6	5
				Lo/mH	50	1	0.1	50	1	0.1
+	13.7	29	0.1	Co/µF	0.17	0.47	0.79	1.2	2.6	5
9002/11-280-112-001										
	28	109	0.76	Lo / mH	-	-	0.05	5	1	0.1
1	20	100	0.70	Co / µF	-	-	0.083	0.23	0.34	0.65
l II	28	3	0.02	Lo/mH	50	1	0.1	50	1	-
"			0.02	Co/µF	0.062	0.075	0.083	0.34	0.41	-
1 + 11	28	112	0.78	Lo/mH Co/µF	-	-	-	5 0.28	0.36	0.1
9002/11-280-244-001				007 μι	J	1"	1.	10.20	10.00	0.001
			T	Lo / mH	T_	_	T_	T_	1	0.1
1	28	184	1.29	Co/µF	-	-	-	-	0.3	0.65
11	00	00	0.40	Lo/mH	-	1	0.1	10	1	0.1
11	28	60	0.42	Co/µF	-	0.059	0.083	0.28	0.37	0.65
+	28	244	1.71	Lo / mH	-	-	-	-	1	0.05
	20		1.71	Co / µF	-	-	<u> - </u>	-	0.28	0.551
9002/11-280-293-001 + 9002/11-280-293										
1	28	89	0.63	Lo / mH	_	1	1	10	1	0.1
1	20	00	0.00	Co / µF	-	0.053	0.083	0.25	0.35	0.65
ll	9.56	180	0.43	Lo / mH	-	1 . 70	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 Co/µF	-	-	-	0.24	0.36	-
9002/11-199-030-001					·			1		
1	19.9	15	0.075	Lo/mH	10	1	0.1	10	1	0.1
1	19.9	13	0.075	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
11	10.0	'	0.070	Co/µF	0.15	0.17	0.22	0.8	0.98	1.3
	19.9	30	0.15	Lo / mH	10	1	0.1	10	1	0.1
	1		<u></u>	Co / µF	0.14	0.16	0.22	0.77	0.97	1.3

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Type / Channel	U ₀ [V]	lo [mA]	Po [W]			IIC			IIB		
9002/13-199-225-001											
I	19.9	222	1.1	Lo/mH Co/µF	-	0.2	0.1 0.18	-	0.79	0.1	
П	19.9	3	0.015	Lo/mH Co/µF	10 0.17	0.17	0.1 0.22	10 0.83	0.99	0.1	
1+11	19.9	225	1.12	Lo/mH Co/µF	-	0.2	0.1 0.18	2 0.79	0.79	0.1	
9002/13-252-121-041			<u> </u>				•	•		•	
I	25.2	118	0.74	Lo/mH Co/µF	-	0.5 0.074	0.1	5 0.35	0.41	0.1	
II	25.2	0	0.02	Lo/mH Co/µF	10 0.083	0.09	0.1 0.107	50 0.43	0.5	0.1	
I + II	25.2	121	0.76	Lo / mH Co / µF	-	0.5	0.1	5 0.36	1 0.43	0.1 0.683	
9002/13-280-093-001			J		'		1	•			
I	28	90	0.63	Lo / mH Co / µF	-	0.052	0.1	10 0.25	1 0.35	0.1 0.65	
II	28	3	0.021	Lo/mH Co/µF	50 0.062	1 0.075	0.1 0.083	50 0.34	0.41	0.1 0.65	
1+11	28	93	0.651	Lo/mH Co/µF	-	-	-	5 0.25	0.36	0.1 0.551	
9002/13-280-100-041											
I	28	97	0.679	Lo/mH Co/µF	-	0.5	0.1	10 0.24	1 0.35	0.1 0.65	
II	28	0	0.021	Lo/mH Co/µF	50 0.062	1 0.075	0.1	50 0.34	0.41	0.1 0.65	
1 + 11	28	100	0.7	Lo/mH Co/µF	-	-	-	5 0.28	1 0.36	0.1 0.551	
9002/13-280-110-001											
I	28	107	0.749	Lo/mH Co/µF		-	0.1	5 0.23	0.34	0.1 0.65	
11	28	3	0.021	Lo/mH Co/µF	50 0.062	0.075	0.1	50 0.34	0.41	0.1 0.65	
+	28	110	0.77	Lo/mH Co/µF				5 0.28	0.36	0.1 0.551	
9002/13-280-188-001											
1	28	185	1.295	Lo/mH Co/µF	_	-	-	-	0.3	0.1 0.65	
II	28	3	0.021	Lo/mH Co/µF	50 0.062	1 0.075	0.1 0.083	50 0.34	0.41	0.1 0.65	
1+11	28	188	1.316	Lo/mH Co/µF	-	-	-	5 0.28	0.36	0.1 0.551	



Braunschweig und Berlin

Type / Channel	U ₀ [V]	lo [mA]	Po [W]			ilC			IIB			
9002/22-016-383-111												
1	0.8	191.5	0.038	Lo/mH	-	1	0.1	5	1	0.1		
	0.0	101.0	0.000	Co/µF	-	100	100	400	900	1000		
	0.8	191.5	0.038	Lo/mH Co/µF	-	100	100	5 400	900	1000		
1+11	1.6	383	0.077	Lo/mH	-	0.5	0.1	2	1	0.1		
	110			Co/µF	-	26	67	100	170	620		
9002/22-032-300-111				T								
1	1.6	150	0.06	Lo/mH	2	1	0.1	10	1	0.1		
•				Co/µF	20	29	73	72	200	640		
11	1.6	150	0.06	Lo/mH Co/µF	20	1	73	10 72	200	0.1 640		
				Lo/mH	20	29 0.5	0.1	2	1	0.1		
+	3.2	300	0.12	Co / µF	 	7.3	15	30	41	110		
9002/22-048-442-111				 		-1	•	<u> </u>				
•		T_00.4	0.400	Lo / mH		1	0.1	5	1	0.1		
1	2.4	221	0.133	Co / µF		10	29	36	80	220		
11	0.4	004	0.400	Lo/mH		1	0.1	5	1	0.1		
	2.4	221	0.133	Co / µF		10	29	36	80	220		
+	4.8	442	0.266	Lo/mH		0.2	0.1		1	0.1		
1 ' 11	7.0	772	0.200	Co / µF		4.4	6.1		16	43		
9002/22-158-200-001												
1	7.9	100	0.198	Lo / mH	2	1	0.1	10	1	0.1		
· ·	7.0	100	0,100	Co/µF	1	1.3	2.5	3.9	7.6	16		
	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		
+	15.8	200	0.395	Lo/mH Co/µF		0.5	0.1	1.4	1.7	0.1 2.6		
9002/22-240-024-001			<u> </u>	007 μι		10.54	10.50	1.7	1.1	2.0		
0002/22 200			Γ	Lo / mH	50	1	0.1	50	1	0.1		
1	12	12	0.04	Co / µF	0.34	0.63	1.1	1.8	3.5	6.6		
		40	0.04	Lo / mH	50	1	0.1	50	1	0.1		
	12	12	0.04	Co / µF	0.34	0.63	1.1	1.8	3.5	6.6		
+	24	24	0.08	Lo / mH	50	1	0.1	50	1	0.1		
			0.00	Co / µF	0.26	0.62	1.1	1.6	3.4	6.6		
9002/22-240-160-001		1			T	T	T = :	1		T = /		
ı	12	80	0.24	Lo/mH Co/µF	5 0.33	0.57	0.1	1.8	3.3	0.1 6.6		
	1.0	1	1	Lo / mH	5	1	0.1	10	1	0.1		
II	12	80	0.24	Co / µF	0.33	0.57	1.1	1.8	3.3	6.6		
+	24	160	0.48	Lo/mH			0.02	2	1	0.1		
T		100	0.40	Co/µF]		0.125	0.37	0.85	0.93		



Braunschweig und Berlin

Type / Channel	U ₀ [V]	lo [mA]	Po [W]		IIC			IIB			
9002/33-280-000-001											
1	28	"0"		Lo/mH	50-5	1	0.1	50-5	1	0.1	
•				Co/µF Lo/mH	0.062 50-5	0.075	0.083	0.33 50-5	0.41	0.65	
11	28	"O"		Co / µF	0.062	0.075	0.083	0.33	0.41	0.65	
+	28	"0"		Lo/mH Co/µF	50-5 0.062	1 0.075	1 0.083	50-5 0.33	0.41	0.1 0.65	
9002/34-280-000-001			L	CO / µF	10.002	10.075	10.063	0.33	10.41	10.00	
			T	Lo / mH	10	1	0.1	10	1	0.1	
1	20	"O"		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	
11	0	,,0		Co / µF	43	7.9	16	5.1	7.9	16	
+	28	"0"		Lo/mH Co/µF	50-5 0.062	0.075	0.1	50-5 0.33	0.41	0.1 0.65	
9002/77-093-040-001 (auch als 9002/22)			<u> </u>	007 μΓ	0.002	10.075		10.55	0.41	10.00	
1	9.3	20	0.05	Lo/mH	10	1	0.1	10	1	0.1	
1	3.5	20	0.00	Co / µF	0.68	1	1.8	3.6	5.7	11	
II	9.3	20	0.05	Lo/mH Co/µF	10 0.68	1	0.1	10 3.6	5.7	0.1	
				Lo / mH	10	 	0.1	10	1	0.1	
+	9.3	40	0.09	Co / µF	0.59	1	1.8	3.4	5.7	11	
9002/77-093-300-001 (auch als 9002/22)											
	9.3	150	0.35	Lo/mH	2	1	0.1	5	1	0.1	
'		100	-	Co / µF	0.58	0.82	1.8	3.1	5.3	0.1	
II	9.3	150	0.35	Lo/mH Co/µF	0.58	0.82	0.1 1.8	5 3.1	5.3	11	
				Lo/mH	0.00	0.5	0.1	2	1	0.1	
+	9.3	300	0.7	Co / µF		0.83	1.7	3.4	4.7	11	
9002/77-100-400-001											
	10	200	0.5	Lo/mH		1	0.1	5	1	0.1	
1	10	200	0.5	Co / µF		0.62	1.5	2.3	4.4	9.4	
II	10	200	0.5	Lo / mH		0.62	0.1 1.5	5 2.3	4.4	0.1 9.4	
			1	Co / µF Lo / mH		0.02	0.1	2.3	1	0.1	
+	10	400	1	Co/µF		1	1.4		3.7	9.2	
9002/77-150-300-001											
1	15	150	0.56	Lo/mH Co/µF		0.31	0.1	5 1.2	2	0.1 3.55	
	4.5	450	0.50	Lo / mH		1	0.1	5	1	0.1	
11	15	150	0.56	Co / µF		0.31	0.54	1.2	2	3.55	
+	15	300	1.13	Lo/mH		0.2	0.1		1	0.1	
1 . 11			1	Co / µF		0.48	0.48		1.8	3.5	



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Type / Channel	U ₀ [V]	lo [mA]	Po [W]		IIC			IIB		
9002/77-220-146-001										
1	22	73	0.4	Lo / mH	5	1	0.1	10	1	0.1
,		ļ. -		Co / µF	0.09	0.096	0.165	0.55	0.63	1
II	22	73	0.4	Lo / mH	5	1 0.000	0.1	10	1	0.1
				Co/µF	0.09	0.096	0.165	0.55 5	0.63	0.1
1+11	22	146	0.8	Lo/mH Co/µF		0.091	0.16	0.56	0.57	0.99
9002/77-220-296-001		1	J	1 00 / μι		1 0.00 1	10.10	10.00	10.01	10.00
	0.5 0.1 5 1									0.1
1	22	148	0.81	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
1+11	22	296	1.63	Lo/mH					1	0.1
				Co / µF					0.45	0.93
9002/77-280-094-001										
l 28		47	0.33	Lo / mH	10	1	0.1	10	1	0.1
	28			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
1 + 11	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



Braunschweig und Berlin

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

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

Electrical data

Non-intrinsically safe circuits (terminals 1 and 2)

type of protection Non-Sparking Ex nA Gc safety-related maximum voltage for application as an associated apparatus:

$$U_{\rm m} = 253 \, V$$

Intrinsically safe circuit (terminals 3 and 4)

type of protection Intrinsic Safety Ex ia IIB/IIC Ga

Maximum values:

$$U_o = \pm 3.2 \text{ V}$$
 $I_o = \pm 300 \text{ mA}$
 $P_o = 120 \text{ mW}$
 $U_i = \pm 4.2 \text{ V}$
 $I_i = \pm 150 \text{ mA}$
 $P_i = 160 \text{ mW}$

the effective internal inductance L_i and capacitance C_i are negligibly low

All circuits are interconnected by the reference conductor and they are electrically connected to ground.

Additional note:

The following values of the permissible inductance L_o and capacitance C_o in the (field) circuit apply to the interconnection of the safety barrier and an interface with the active input values given above:

	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 shall be subtracted.

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

Applied standards

EN 60079-0:2012

EN 60079-11:2012

EN 60079-15:2010

Test report:

PTB Ex 13-23074

Zertifizierungssektor Explosionsschutz

On behalf of PTB:

Dr.-Ing. U. Johannsmeye

Direktor und Professor

Braunschweig, August 19, 2013