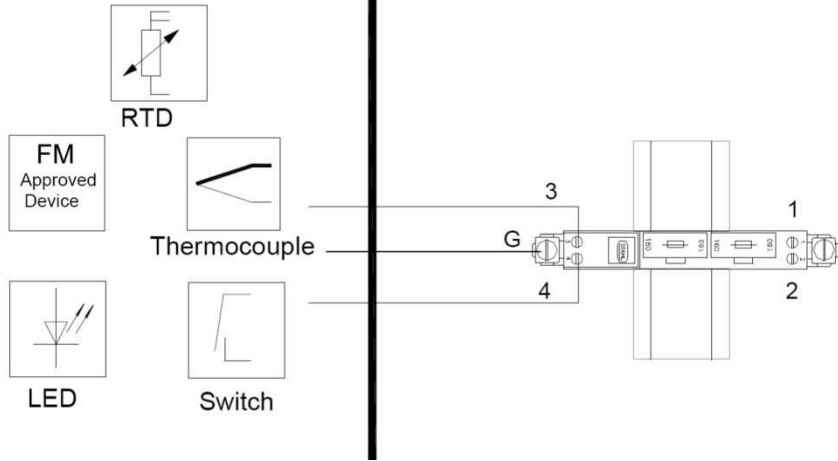


The copying, distribution and utilization of this document as well as the communication of its contents to others without expressed authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or ornamental design registration.

Class I, II, III, Div. 1, Group A - G
or Class I, Zone 0, Group IIC/IIB
Hazardous Locations

Nonhazardous or Class I, Div. 2, Group A, B, C, D
or Class I, Zone 2, Group IIC
Hazardous Locations

Intrinsically Safe Apparatus
or Simple Apparatus



The Intrinsic Safety Barriers are associated apparatus located in a Nonhazardous or Class I, Div. 2, Group A, B, C, D or Class I, Zone 2, Group IIC locations and provide intrinsically safe connections for device(s) located in Class I, Div. 1, Group A, B, C, D; Class II, Div. 1, Group E, F & G; Class III, Div. 1; or Class I, Zone 0, Group IIC/IIB Hazardous (Classified) Locations.

Notes:

- Intrinsically safe apparatus may be switches, thermocouples, LEDs, RTDs, or a FM Approved System or Entity device connected in accordance with the manufacturer's installation instructions.
- For Entity concept use the appropriate parameters from above to ensure the following:

$$V_t \text{ or } V_{OC} \leq V_{max} \quad C_a \geq C_i + C_{leads}$$

$$I_t \text{ or } I_{SC} \leq I_{max} \quad L_a \geq L_i + L_{leads}$$
- Electrical apparatus connected to non-IS side of barrier should not use or generate voltages > 250 V (U_{max}).
- Installation should be in accordance with Article 504/505 of the National Electrical Code, ANSI/NFPA 70 and ANSI/ISA RP 12.6.
- Use a general purpose enclosure meeting the requirements of ANSI/ISA S82.02.01 for use in nonhazardous locations.
- Maximum barrier operating temperature is 60°C except as follows:
 $T_a = 50^\circ\text{C}$: 9002/77-220-146-001
 9002/77-220-296-001

WARNING: To prevent ignition of flammable or combustible atmospheres disconnect power before servicing

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadensersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustererträge vorbehalten.

F 4830 503

			2001	Date	Name	Certification drawing Intrinsic Safety Barrier (ATEX) Type 9002/...-...-... 1	Scale
			Drawn by	5/01	Tobey		none
			Checked	5/01	Feindel		Sheet 1 of 4
						90 026 11 31 1	Agency
02	14.03.11	Reistle					FM
01	06.03.09	Einsiedler					
Index	Date	Name	Rep. f.			Rep. t.	A4

The copying, distribution and utilization of this document as well as the communication of its contents to others without expressed authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or ornamental design registration.

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadensersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustererträge vorbehalten.

BARRIER PART NO	TERMINAL	V _{OC} (V)	I _{SC} (mA)	P _{max} (W)	Grps. A, B, E	Grps. C, D, F, G
		U _O (V)	I _O (mA)	P _O (W)	Grp. IIC	Grps. IIB/IIA
					L _a /C _a (mH/μF)	L _a /C _a (mH/μF)
9002/00-120-024-001	3 to GND	12	12	0.04	240 / 1.41	850 / 9
	4 to GND	12	12	0.04	240 / 1.41	850 / 9
	3 & 4	Vt = 12.7	It = 24	0.07	63 / 1.1	230 / 7.1
9002/00-260-138-001	3 to GND	26	83	0.54	2.7 / 0.099	15.5 / 0.77
	4 to GND	20	49	0.245	14 / 0.22	54 / 1.41
	3 & 4	Vt = 27.4	It = 132	0.785	0.81 / 0.087	5.1 / 0.67
9002/00-280-186-001	3 to GND	28	93	0.65	2 / 0.083	13 / 0.65
	4 to GND	28	93	0.65	2 / 0.083	13 / 0.65
	3 & 4	Vt = 30.1	It = 186	1.3	N / A	2.8 / 0.551
9002/10-187-020-001	3 to GND	9.33	20	0.05	90 / 3.9	330 / 29
	4 to GND	9.33	20	0.05	90 / 3.9	330 / 29
	3 & 4	Vt = 18.7	It = 20	0.09	90 / 0.27	330 / 1.64
9002/10-187-270-001	3 to GND	9.33	270	0.63	0.23 / 3.9	2.2 / 29
	4 to GND	9.33	270	0.63	0.23 / 3.9	2.2 / 29
	3 & 4	Vt = 18.7	It = 270	1.26	0.23 / 0.27	2.2 / 1.64
9002/10-210-030-001	3 to GND	10.5	30	0.08	40 / 2.41	150 / 16.8
	4 to GND	10.5	30	0.08	40 / 2.41	150 / 16.8
	3 & 4	Vt = 21	It = 30	0.16	40 / 0.188	150 / 1.27
9002/11-120-024-001	3 to GND	12	12	0.04	240 / 1.41	850 / 9
	4 to GND	12	12	0.04	240 / 1.41	850 / 9
	3 & 4	Vt = 12.7	It = 24	0.07	63 / 1.1	230 / 7.1
9002/11-130-360-001	3 to GND	13	321	1.04	0.19 / 1	1.6 / 6.2
	4 to GND	1.6	39	0.016	24 / 100	91 / 1000
	3 & 4	Vt = 13.3	It = 360	1.17	0.17 / 0.79	1.3 / 5
9002/11-137-029-001	3 to GND	13.7	14.5	0.05	160 / 0.79	560 / 5
	4 to GND	13.7	14.5	0.05	160 / 0.79	560 / 5
	3 & 4	Vt = 14.4	It = 29	0.1	43 / 0.67	160 / 4.18
9002/11-199-030-001	3 to GND	19.9	15	0.075	160 / 0.223	560 / 1.42
	4 to GND	19.9	15	0.075	160 / 0.223	560 / 1.42
	3 & 4	Vt = 20.6	It = 30	0.15	40 / 0.223	150 / 1.42
9002/11-260-138-001	3 to GND	26	83	0.54	2.7 / 0.099	15.5 / 0.77
	4 to GND	20	49	0.245	14 / 0.22	54 / 1.41
	3 & 4	Vt = 27.4	It = 132	0.785	0.81 / 0.087	5.1 / 0.67
9002/11-280-112-001	3 to GND	28	109	0.76	1.3 / 0.083	9 / 0.65
	4 to GND	28	3	0.02	50 / 0.083	150 / 0.65
	3 & 4	Vt = 28.7	It = 112	0.78	0.76 / 0.065	8.4 / 0.551
9002/11-280-186-001	3 to GND	28	93	0.65	2 / 0.083	13 / 0.65
	4 to GND	28	93	0.65	2 / 0.083	13 / 0.65
	3 & 4	Vt = 30.1	It = 186	1.3	N / A	2.8 / 0.551
9002/11-280-293-001	3 to GND	28	89	0.63	2.2 / 0.083	14 / 0.65
	4 to GND	9.56	180	0.43	0.6 / 3.6	5 / 26
	3 & 4	Vt = 28.7	It = 269	1.05	N / A	0.56 / 0.62
9002/11-280-293-021	3 to GND	28	89	0.63	2.2 / 0.083	14 / 0.65
	4 to GND	9.56	180	0.43	0.6 / 3.6	5 / 26
	3 & 4	Vt = 28.7	It = 269	1.05	N / A	0.56 / 0.62

F 4830 503


			2001	Date	Name	Certification drawing Intrinsic Safety Barrier (ATEX) Type 9002/...-...-...-1	Scale
			Drawn by	5/01	Tobey		none
			Checked	5/01	Feindel		Sheet
							2 of 4
							Agency
							FM
02	14.03.11	Reistle					
01	06.03.09	Einsiedler					
Index	Date	Name				Rep. f.	Rep. t.
							A4



The copying, distribution and utilization of this document as well as the communication of its contents to others without expressed authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or ornamental design registration.

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadensersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

BARRIER PART NO	TERMINAL	V _{OC} (V)	I _{SC} (mA)	P _{max} (W)	Grps. A, B, E	Grps. C, D, F, G
		U _O (V)	I _O (mA)	P _O (W)	Grp. IIC	Grp. IIB/IIA
					L _a /C _a (mH/µF)	L _a /C _a (mH/µF)
9002/13-199-225-001	3 to GND	19.9	222	1.1	0.39 / 0.223	3.18 / 1.42
	4 to GND	19.9	3	0.015	1000 / 0.223	1000 / 1.42
	3 & 4	Vt = 20.2	It = 225	1.12	0.37 / 0.213	3.15 / 1.38
9002/13-252-121-041	3 to GND	25.2	118	0.74	1.3 / 0.107	7.4 / 0.82
	4 to GND	25.2	0	0.02	50 / 0.107	150 / 0.82
	3 & 4	Vt = 25.5	It = 121	0.76	1.25 / 0.104	7.35 / 0.8
9002/13-280-093-001	3 to GND	28	90	0.63	2.2 / 0.083	14 / 0.65
	4 to GND	28	3	0.021	50 / 0.083	150 / 0.65
	3 & 4	Vt = 28.3	It = 93	0.651	2 / 0.08	13 / 0.636
9002/13-280-100-041	3 to GND	28	97	0.679	1.8 / 0.083	12 / 0.65
	4 to GND	28	0	0.021	50 / 0.083	150 / 0.65
	3 & 4	Vt = 28.3	It = 100	0.7	1.55 / 0.08	11 / 0.635
9002/13-280-110-001	3 to GND	28	107	0.749	1.35 / 0.083	9.6 / 0.65
	4 to GND	28	3	0.021	50 / 0.083	150 / 0.65
	3 & 4	Vt = 28.3	It = 110	0.77	1.25 / 0.08	9 / 0.635
9002/13-280-188-001	3 to GND	28	185	1.295	N / A	2.85 / 0.65
	4 to GND	28	3	0.021	N / A	150 / 0.65
	3 & 4	Vt = 28.3	It = 188	1.316	N / A	2.7 / 0.635
9002/22-016-383-111	3 to GND	0.8	191.5	0.038	0.54 / 100	4.4 / 1000
	4 to GND	0.8	191.5	0.038	0.54 / 100	4.4 / 1000
	3 & 4	Vt = 1.6	It = 383	0.077	0.16 / 100	0.96 / 1000
9002/22-032-300-111	3 to GND	1.6	150	0.06	1.3 / 100	7 / 1000
	4 to GND	1.6	150	0.06	1.3 / 100	7 / 1000
	3 & 4	Vt = 3.2	It = 300	0.12	0.2 / 100	1.8 / 1000
9002/22-048-442-111	3 to GND	2.4	221	0.133	0.4 / 100	3.19 / 1000
	4 to GND	2.4	221	0.133	0.4 / 100	3.19 / 1000
	3 & 4	Vt = 4.8	It = 442	0.266	0.12 / 100	0.54 / 1000
9002/22-158-200-001	3 to GND	7.9	100	0.198	4.0 / 8.8	15 / 115
	4 to GND	7.9	100	0.198	4.0 / 8.8	15 / 115
	3 & 4	Vt = 15.8	It = 200	0.395	0.5 / 0.478	4 / 2.88
9002/22-240-024-001	3 to GND	12	12	0.04	240 / 1.41	850 / 9
	4 to GND	12	12	0.04	240 / 1.41	850 / 9
	3 & 4	Vt = 24	It = 24	0.08	41 / 0.125	145 / 0.93
9002/22-240-160-001	3 to GND	12	80	0.24	6 / 1.41	22 / 9
	4 to GND	12	80	0.24	6 / 1.41	22 / 9
	3 & 4	Vt = 24	It = 160	0.48	0.7 / 0.125	4 / 0.93
9002/33-280-000-001	3 to GND	28	0	0	1000 / 0.083	1000 / 0.65
	4 to GND	28	0	0	1000 / 0.083	1000 / 0.65
	3 & 4	Vt = 28	It = 0	0	1000 / 0.083	1000 / 0.65
9002/34-280-000-001	3 to GND	20	0	0	1000 / 0.22	1000 / 1.41
	4 to GND	8	0	0	1000 / 8.4	1000 / 100
	3 & 4	Vt = 28	It = 0	0	1000 / 0.083	1000 / 0.65

			2001	Date	Name	Certification drawing Intrinsic Safety Barrier (ATEX) Type 9002/...-...-...-...1	Scale	
			Drawn by	5/01	Tobey		none	
			Checked	5/01	Feindel		Sheet	
							90 026 11 31 1	3 of 4
02	14.03.11	Reistle						
01	06.03.09	Einsiedler						FM
Index	Date	Name					Rep. f.	Rep. t.
							A4	

The copying, distribution and utilization of this document as well as the communication of its contents to others without expressed authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or ornamental design registration.


BARRIER PART NO	TERMINAL	V _{OC} (V)	I _{SC} (mA)	P _{max} (W)	Grps. A, B, E	Grps. C, D, F, G
		U _O (V)	I _O (mA)	P _O (W)	Grp. IIC	Grp. IIB/IIA
					L _a /C _a (mH/μF)	L _a /C _a (mH/μF)
9002/77-093-040-001	3 to GND	9.3	20	0.05	90 / 4.1	330 / 31
	4 to GND	9.3	20	0.05	90 / 4.1	330 / 31
	3 & 4	V _t = 9.3	I _t = 40	0.09	23 / 4.1	87 / 31
9002/77-093-300-001	3 to GND	9.3	150	0.35	1.3 / 4.1	7 / 31
	4 to GND	9.3	150	0.35	1.3 / 4.1	7 / 31
	3 & 4	V _t = 9.3	I _t = 300	0.7	0.2 / 4.1	1.8 / 31
9002/77-100-400-001	3 to GND	10	200	0.5	0.5 / 3	4 / 20.2
	4 to GND	10	200	0.5	0.5 / 3	4 / 20.2
	3 & 4	V _t = 10	I _t = 400	1	0.15 / 3	0.8 / 20.2
9002/77-150-300-001	3 to GND	15	150	0.56	1.3 / 0.58	7 / 3.55
	4 to GND	15	150	0.56	1.3 / 0.58	7 / 3.55
	3 & 4	V _t = 15	I _t = 300	1.13	0.2 / 0.58	1.8 / 3.55
9002/77-220-146-001	3 to GND	22	73	0.4	7 / 0.165	26 / 1.14
	4 to GND	22	73	0.4	7 / 0.165	26 / 1.14
	3 & 4	V _t = 22	I _t = 146	0.8	1.4 / 0.165	7.4 / 1.14
9002/77-220-296-001	3 to GND	22	148	0.81	1.35 / 0.165	7.2 / 1.14
	4 to GND	22	148	0.81	1.35 / 0.165	7.2 / 1.14
	3 & 4	V _t = 22	I _t = 296	1.63	0.24 / 0.165	1.84 / 1.14
9002/77-280-094-001	3 to GND	28	47	0.33	10.1 / 0.083	30 / 0.65
	4 to GND	28	47	0.33	10.1 / 0.083	30 / 0.65
	3 & 4	V _t = 28	I _t = 94	0.66	1.96 / 0.083	12.5 / 0.65

BARRIER PART NO	TERMINAL	V _{max} (V)	I _{max} (mA)	P _{max} (W)	Grps. A, B, E	Grps. C, D, F, G
		U _i (V)	I _i (mA)	P _i (W)	Grp. IIC	Grp. IIB/IIA
					L _a /C _a (mH/μF)	L _a /C _a (mH/μF)
9002/22-032-300-111	3 & 4	± 4.2	± 150	0.16	0.37 / 1.8	0.5 / 11

Remark: Eventually present internal inductance L_i and capacitance C_i have to be subtracted.

Weitergabe sowie Vervielfältigung dieses Dokuments, Verwertung und Mitteilung seines Inhalts sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadensersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmustereintragung vorbehalten.

F 4830 503

			2001	Date	Name	Certification drawing Intrinsic Safety Barrier (ATEX) Type 9002/...-...-...-... 1	Scale
			Drawn by	5/01	Tobey		none
			Checked	5/01	Feindel		Sheet
						90 026 11 31 1	4 of 4
02	14.03.11	Reistle					Agency
01	06.03.09	Einsiedler					FM
Index	Date	Name	Rep. f.			Rep. t.	A4