



(1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

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

(3) EC-type-examination Certificate Number:

PTB 99 ATEX 2128 X



(4) Equipment: Ring initiator types RJ..., RC... and TG...

(5) Manufacturer: Pepperl + Fuchs GmbH

(6) Address: D-68307 Mannheim

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(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 equipment 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 examination and test results are recorded in the confidential report PTB Ex 99-29058.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 **EN 50020:1994**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment 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 equipment shall include the following:

 **II 2 G EEx Ia IIC T6**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, August 10, 1999

In the absence of Dr.-Ing. U. J. ...
Regierungsdirektor



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(13)

SCHEDULE

(14) EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 2128 X

(15) Description of equipment

The ring initiators of types RJ..., RC... and TG... are used to convert displacements into electrical signals.

The ring initiators may be operated with intrinsically safe circuits certified for categories and explosion groups [EEx ia] IIC or IIB resp. [EEx ib] IIC or IIB. The category as well as the explosion group of the intrinsically safe ring initiators depends on the connected supplying intrinsically safe circuit.

Electrical data

Evaluation and
supply circuit.....type of protection Intrinsic Safety EEx ia IIC/IIB
..... resp. EEx ib IIC/IIB
..... only for connection to certified intrinsically safe circuits
Maximum values:

type 1	type 2	type 3
$U_i = 16\text{ V}$	$U_i = 16\text{ V}$	$U_i = 16\text{ V}$
$I_i = 25\text{ mA}$	$I_i = 25\text{ mA}$	$I_i = 52\text{ mA}$
$P_i = 34\text{ mW}$	$P_i = 64\text{ mW}$	$P_i = 169\text{ mW}$

The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual types of ring initiators are shown in the table:

types	L _i [μH]	C _i [nF]	type 1			type 2			type 3		
			maximum permissible ambient temperature in °C for application in temperature class								
			T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
RJ10-N...	20	30	75	90	100	70	85	100	55	70	90
RJ10-...-N...	20	30	75	90	100	70	85	100	55	70	90
RJ10-Bi...	20	90	75	90	100	70	85	100	55	70	90
RJ10-...-Bi...	20	90	75	90	100	70	85	100	55	70	90
RC10-...-N0...	100	150	75	90	100	70	85	100	55	70	90
RC10-...-N3...	120	90	75	90	100	70	85	100	55	70	90
TG10	20	30	75	90	100	70	85	100	55	70	90
TG10-1	100	150	75	90	100	70	85	100	55	70	90
TG10-bi	20	90	75	90	100	70	85	100	55	70	90
TG10-1bi	120	90	75	90	100	70	85	100	55	70	90
RJ15-N...	20	130	75	90	100	70	85	100	55	70	90
RJ15-...-N...	20	130	75	90	100	70	85	100	55	70	90
RJ15-Bi...	50	90	75	90	100	70	85	100	55	70	90
RJ15-...-Bi...	50	90	75	90	100	70	85	100	55	70	90
RC15-...-N0...	100	150	75	90	100	70	85	100	55	70	90
RC15-...-N3...	70	90	75	90	100	70	85	100	55	70	90
TG15	20	130	75	90	100	70	85	100	55	70	90
TG15-1	100	150	75	90	100	70	85	100	55	70	90
TG15-bi	50	90	75	90	100	70	85	100	55	70	90
TG15-1bi	70	90	75	90	100	70	85	100	55	70	90
RJ21-N...	25	30	75	90	100	70	85	100	55	70	90
RJ21-Bi...	50	70	75	90	100	70	85	100	55	70	90
RJ43-N...	50	40	75	90	100	70	85	100	55	70	90

(16) Test report PTB Ex 99-29058

(17) Special conditions for safe use

1. For the application within a temperature range of -60°C to -20 °C the ring initiators of types RJ..., RC... and TG... must be protected against damage due to impact by mounting into an additional housing.
2. The connection facilities of the ring initiators of types RJ..., RC... and TG... shall be installed as such that at least a degree of protection of IP20 according to IEC-publication 60529:1989 is met.

3. The assignment of the type of the connected circuit to the maximum permissible ambient temperature and the temperature class as well as the effective internal reactances for the individual types of ring initiators is shown in the table given under item (15) of this EC-type-examination certificate..
4. Inadmissible electrostatic charge of the plastic housing of the ring initiators of types RJ43-...-N..., RJ21-...-N... and RJ21-...-Bi... has to be avoided. A warning label on the device shall point to this danger.

(18) Essential health and safety requirements

Met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, August 10, 1999


In the absence of Dr.-Ing. U. Johanning
Regierungsdirektor

