

## 4. Alarm contacts

The permissible limits for  $U_i$ ,  $I_i$  and  $P_i$  of the intrinsically safe supply circuits depend on the sensor type. They can be taken from the corresponding EC-type examination certificates. (The sensor type is stated on the connection plate of the pressure gauge.)

**GB** Suitable switch amplifiers are e.g.:

Circuit (s. Ex-certific.)	Sensor type	Model designation Fa. Pepperl & Fuchs	EC-type exami- nation certificate	WIKA- Model
<b>Model 1</b>	standard	KFD2-SR2-Ex1	PTB 00 ATEX 2080	904.31
	standard	KFD2-SR2 Ex2	PTB 00 ATEX 2080	904.32
<b>Model 2</b>	standard	KHA6-SR2-Ex1	PTB 99 ATEX 2141	904.28
	standard	KHA6-SR2-Ex2	PTB 99 ATEX 2141	904.29
	SN-sensors	KFD2-SH-Ex1	PTB 00 ATEX 2042	904.33
	SN-sensors	KHA6-SH-Ex1	PTB 00 ATEX 2043	904.30

### Electromagnetic compatibility

EMC according to EN 60 947-5-2.

The instruments are to be protected against strong electromagnetic fields.

### To set desired value indicator

The desired value indicators for the alarm contacts are adjustable over the adjustment lock in the window with the aid of adjustment key (included in delivery; to be found on standard gauges on the outside edge of the junction box).



The desired value indicators for the alarm contacts are adjustable over the full range of the instrument. Switching points shall be set in the ranges between 10 % und 90 % of the scale, to ensure switching accuracy and long life of the mechanical measuring system.

## 5. Commissioning ... 7. Repairs

### 5. Commissioning

During the commissioning process pressure peaks must be absolutely avoided. Open the shut-off valves slowly.

GB

### 6. Maintenance and servicing / cleaning

The instruments require no maintenance or servicing. The indicator and switching function should be checked once or twice every 12 months. The instrument must be disconnected from the process to check with a pressure testing device.

The instruments should be cleaned with a damp cloth moistened with soap solution. For cleaning inside the instrument the mains power supply should be disconnected by means of the plug box. It must be ensured that all the parts are dry before the power is switched on again.

### 7. Repairs

Repairs are to be only carried out by the manufacturer or appropriately trained personnel.

For further details see WIKA data sheet AC 08.01 or the data sheet for the respective basic gauge.

## Enclosure 1:

GB

### Konformitätserklärung Richtlinie 94 / 9 / EG (ATEX)

Wir erklären in alleiniger Verantwortung, dass nachstehend genannte Produkte, Druckmessgeräte mit Rohrfeder, gemäß gültigem Datenblatt mit der Richtlinie übereinstimmen und dem Konformitätsbewertungsverfahren

#### 'Interne Fertigungskontrolle'

unterzogen wurden.

#### WIKA-Typ Datenblatt

21X.20.1x0	PM 02.01
23X.50.1x0	PM 02.02
23X.30.1x0	PM 02.04
23X.36.1x0	PM 02.15

Die Unterlagen werden aufbewahrt unter der Aktennummer 8000550026 bei der benannten Stelle 0032

TÜV NORD CERT  
AM TÜV 1  
D-30519 Hannover

Die Geräte werden gekennzeichnet mit

### Declaration of Conformity Directive 94 / 9 / EC (ATEX)

We declare under our sole responsibility that the products mentioned below, i.e. bourdon tube pressure gauges, according to the current data sheet correspond with the directive and were subjected to the conformity assessment procedure

#### 'Internal Control of Production'

#### WIKA model data sheet

21X.20.1x0	PM 02.01
23X.50.1x0	PM 02.02
23X.30.1x0	PM 02.04
23X.36.1x0	PM 02.15

The dossier is retained under file nr. 8000550026 at the notified body 0032

TÜV NORD CERT  
Am TÜV 1  
D-30519

The gauges are marked with

  II 2 GD c

#### Angewandte Normen:

EN 13463-1 'Nicht-elektrische Geräte für den Einsatz in explosionsgefährdeten Bereichen  
- Grundlagen und Anforderungen'

EN 13463-5 'Schutz durch konstruktive Sicherheit "c"'

Die eingebauten **Grenzsinalgeber 831** sind EG-baumustergeprüft. Die Nummern der Prüfbescheinigungen und die Kennzeichnung

**PTB 99 ATEX 2219 X** bzw./resp. **PTB 00 ATEX 2049 X**

und/and

**ZELM 03 ATEX 0128 X**

Für das komplette Gerät liegt die Konformitätsaussage **TÜV 03 ATEX 2302 X** vor.

#### Applied standards:

EN 13463-1 'Non electrical equipment for potentially explosive atmospheres  
- Basic method and requirements'

EN 13463-5 'Protection by constructional safety "c"'

The built-in **alarm contacts 831** are EC-type-certified. Numbers of certificates and marking

 II 2 G EEx ia IIC T6

 II 1 D Ex iaD 20 T...°C

For the complete gauge the statement of conformity **TÜV 03 ATEX 2302 X** is available.

### WIKA Alexander Wiegand GmbH & Co. KG

Geschäftsbereich Prozessinstrumentierung / Division Process Instrumentation

Klingenberg, 11.05.2004



Armin Hawlik  
Leiter Logistikzentrum 2  
Manager Production and Logistics



Werner Hünérth  
Leiter Qualitätssicherung  
Quality Assurance Manager



Enclosure 2:

Physikalisch-Technische Bundesanstalt  
Braunschweig und Berlin



GB

SCHEDULE

(13)

(14) EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 2219 X

(15) Description of equipment

The slot-type initiators of types SJ... and SC... are used to convert displacements into electrical signals.

The slot-type 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 slot-type 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	type 4
$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$	$I_i = 25 \text{ mA}$	$I_i = 52 \text{ mA}$	$I_i = 76 \text{ mA}$
$P_i = 34 \text{ mW}$	$P_i = 64 \text{ mW}$	$P_i = 169 \text{ mW}$	$P_i = 242 \text{ mW}$

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 slot-type initiators are shown in the table:

sheet 2/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2064246 05/2004 GB/D/F

Enclosure 2:

Physikalisch-Technische Bundesanstalt



Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 2219 X

GB

types	C <sub>i</sub> [nF]	L <sub>i</sub> [µH]	type 1		type 2			type 3			type 4			
			maximum permissible ambient temperature in °C for application in temperature class											
			T8	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
SC2-N0...	150	150	72	87	100	65	80	100	40	55	75	23	38	54
SC3,5-N0-Y...	150	150	72	87	100	65	80	100	40	55	75	23	38	54
SC3,5-N0...	150	150	73	88	100	66	81	100	45	60	89	30	45	74
SJ1,8-N-Y...	30	100	73	88	100	67	82	100	45	60	78	30	45	57
SJ2,2-N...	30	100	73	88	100	67	82	100	45	60	78	30	45	57
SJ2-N...	30	100	73	88	100	67	82	100	45	60	78	30	45	57
SJ3,5-N...	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SJ3,5-H...	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SJ5-N...	50	250	73	88	100	66	81	100	45	60	89	30	45	74
SJ5-K...	50	550	72	87	100	66	81	100	42	57	82	26	41	63
SJ10-N...	50	1000	72	87	100	66	81	100	42	57	82	26	41	63
SJ15-N...	150	1200	72	87	100	66	81	100	42	57	82	26	41	63
SJ30-N...	150	1250	72	87	100	66	81	100	42	57	82	26	41	63

(16) Test report PTB Ex 99-29175

(17) Special conditions for safe use

- For the application within a temperature range of -60°C to -20 °C the slot-type initiators of types SJ... and SC... must be protected against damage due to impact by mounting into an additional housing.
- The connection facilities of the slot-type Initiators of types SJ... and SC... shall be installed as such that at least a degree of protection of IP20 according to IEC-publication 60529:1989 is met.
- 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 slot-type initiators is shown in the table given under item (15) of this EC-type-examination certificate..
- Inadmissible electrostatic charge of the plastic housing of the slot-type initiators of type SJ30-N... has to be avoided (warning label on the device ).

(18) Essential health and safety requirements

Met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, August 10, 1999

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



sheet 3/3

EC-type-examination Certificates without signatures and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

2064246 05/2004 GB/D/F

Enclosure 3:

Physikalisch-Technische Bundesanstalt  
Braunschweig und Berlin



GB



(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 00 ATEX 2049 X**

- (4) Equipment: SN-sensors, types NJ... and SJ...
- (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 00-29268.
- (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, October 05, 2000

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



sheet 1/4

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2064246 05/2004 GB/D/F

(13)

**SCHEDULE**

(14)

**EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2049 X**

(15)

Description of equipment

The SN-sensors, types NJ... and SJ... are used to convert displacements into electrical signals.

The SN-sensors, types NJ... and SJ... 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 SN-sensors 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	type 4
$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$	$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$	$I_i = 25 \text{ mA}$	$I_i = 52 \text{ mA}$	$I_i = 76 \text{ mA}$
$P_i = 34 \text{ mW}$	$P_i = 64 \text{ mW}$	$P_i = 169 \text{ mW}$	$P_i = 242 \text{ mW}$

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 SN-sensors is shown in the following table:

sheet 2/4

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Enclosure 3:

Physikalisch-Technische Bundesanstalt



Braunschweig und Berlin

GB

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2049 X

types	C <sub>i</sub> [nF]	L <sub>i</sub> [µH]	type 1			type 2			type 3			type 4		
			maximum permissible ambient temperature in °C for application in temperature class											
			T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1	T6	T5	T4-T1
NJ 2-11-SN...	50	150	73	88	100	66	81	100	45	60	89	30	45	74
NJ 2-11-SN-G...	50	150	76	91	100	73	88	100	62	77	81	54	63	63
NJ 2-12GK-SN...	50	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ 3-18GK-S1N...	70	200	73	88	100	69	84	100	51	66	80	39	54	61
NJ 4-12GK-SN...	70	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ 5-18GK-SN...	120	200	73	88	100	69	84	100	51	66	80	39	54	61
NJ 5-30GK-S1N...	100	200	73	88	100	69	84	100	51	66	80	39	54	61
NJ 6-22-SN...	110	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ 6-22-SN-G...	110	150	76	91	100	73	88	100	62	77	81	54	63	63
NJ 6S1+U.+N...	180	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ 8-18GK-SN...	120	200	73	88	100	69	84	100	51	66	80	39	54	61
NJ 10-30GK-SN...	120	150	73	88	100	69	84	100	51	66	80	39	54	61
NJ 15-30GK-SN...	120	180	73	88	100	69	84	100	51	66	80	39	54	61
NJ 15S-U.-N...	180	150	73	88	100	66	81	100	45	60	89	30	45	74
NJ 20S-U.-N...	200	150	73	88	100	66	81	100	45	60	89	30	45	74
NJ 40-FP-SN...	370	300	73	88	100	66	81	100	45	60	89	30	45	74
SJ 2-SN...	30	100	73	88	100	66	81	100	45	60	78	30	45	57
SJ 2-S1N...	30	100	73	88	100	66	81	100	45	60	78	30	45	57
SJ 3,5-S1N...	30	100	73	88	100	66	81	100	45	60	89	30	45	74
SJ 3,5-SN...	30	100	73	88	100	66	81	100	45	60	89	30	45	74

(16) Test report PTB Ex 00-29268

(17) Special conditions for safe use

- For the application within a temperature range of -60 °C to -20 °C the SN-sensors, types NJ... and SJ... must be protected against damage due to impact by mounting into an additional housing.
- The connection facilities of the SN-sensors, types NJ... and SJ... shall be installed as such that at least a degree of protection of IP20 according to IEC-publication 60529:1989 is met.
- 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 SN-sensors is shown in the table given under item (15) of this EC-type-examination certificate.

sheet 3/4

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Enclosure 3:

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Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2049 X

GB

4. With the application in group IIC inadmissible electrostatic charge of the plastic housing has to be avoided for following types of SN-sensors (warning label on the device):

NJ 40-FP-SN...

5. Inadmissible electrostatic charge of parts of the metal housing has to be avoided for the following types of SN-sensors. Dangerous electrostatic charges of parts of the metal housing can be avoided by grounding of these parts whereas very small parts of the metal housing (e.g. screws) don't need to be grounded:

NJ 2-11-SN-G...  
NJ 6-22-SN-G...  
NJ 6S1+U3+N...  
NJ 6S1+U4+N...  
NJ 15S+U3+N...  
NJ 15S+U4+N...  
NJ 20S+U3+N...  
NJ 20S+U4+N...  
NJ 40-FP-SN-P3...  
NJ 40-FP-SN-P4...

- (18) Essential health and safety requirements

Met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz  
By order:

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



Braunschweig, October 05, 2000

sheet 4/4

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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2064246 05/2004 GB/D/F

Enclosure 4:

GB



Prüf- und Zertifizierungsstelle

ZELM Ex



(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:

**ZELM 03 ATEX 0128 X**

(4) Equipment: Proximity sensors types CB..., CC..., CJ..., NC..., NJ..., SC..., SJ...

(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 Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 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 ZELM Ex 0840217167

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

prEN 61241-0: 2002

31H/143/CD (IEC 61241-11): 2002

(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, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

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



II 1 D Ex IaD 20 T... °C

Zertifizierungsstelle ZELM Ex

Braunschweig, March 28, 2003

Dipl.-Ing. Harald Zeilm



Sheet 1/5

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. This English version is based on the German text. In the case of dispute, the German text shall prevail.

Prüf- und Zertifizierungsstelle ZELM Ex • Siekgraben 56 • D-38124 Braunschweig

2064246 05/2004 GB/D/F

Enclosure 4:



Prüf- und Zertifizierungsstelle

ZELM Ex



GB

SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0128 X**

(15) Description of equipment

The types CB..., CC..., CJ..., NC..., NJ..., SC..., SJ... inductive and capacitive sensors are used for converting of position detection into electrical signals within the explosive atmosphere of category 1 D or 2 D or 3 D.

The inductive and capacitive sensors may be mounted across the boundary between zones 20 and 21 or 21 and 22 respectively.

They shall be used with intrinsically safe circuits. The sensors category depends on the connected intrinsically safe supply circuit.

The inductive and capacitive sensors consist of a resin-potted plastic or metallic housing. The supply connections are made by cable, litz wires, or by screw- or clamp-type terminals.

Instead of the points of the model code other letter- or numeral- combinations will be stated, which are describing several variations and versions of the equipment.

Electrical data

Supply and signal circuit

type of protection Intrinsic Safety Ex iaD or Ex ibD or EEx ia IIB or EEx ib IIB

for connection to certified intrinsically safe circuits only

maximum values:

	type 1	type 2	type 3
U <sub>i</sub>	16 V	16 V	16 V
I <sub>L</sub>	25 mA	25 mA	52 mA
P <sub>i</sub>	34 mW	64 mW	169 mW

lower limit of ambient temperature: acc. table 2

The correlations between type of connected circuit, maximum ambient temperature and surface temperature are shown in the following table 1:

Table 1

type	type 1 U <sub>i</sub> = 16 V I <sub>L</sub> = 25 mA P <sub>i</sub> = 34 mW			type 2 U <sub>i</sub> = 16 V I <sub>L</sub> = 25 mA P <sub>i</sub> = 64 mW			type 3 U <sub>i</sub> = 16 V I <sub>L</sub> = 52 mA P <sub>i</sub> = 169 mW		
	Tu=40°C	Tu=70°C	Tu=100°C	Tu=40°C	Tu=70°C	Tu=100°C	Tu=40°C	Tu=70°C	Tu=100°C
	T	T	T	T	T	T	T	T	T
CB..., CC..., CJ...	44	73	-----	48	76	-----	60	85	-----
NJ10-22-N-E93-Y106925	44	73	-----	48	76	-----	60	85	-----
NJ10-22-N-E93-Y30629	44	73	-----	48	76	-----	60	85	-----
NJ10-22-N-E93-Y52737	44	73	-----	48	76	-----	60	85	-----
NC..., NJ..., SC..., SJ...	44	73	102	48	76	103	60	85	108

Tu: upper limit of ambient temperature

Sheet 2/5

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. This English version is based on the German text. In the case of dispute, the German text shall prevail.

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2064246 05/2004 GB/D/F

Enclosure 4:



Prüf- und Zertifizierungsstelle

ZELM Ex



GB

Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0128 X

The maximum effective internal capacitances and inductances of the various sensor types are shown in the following table 2:

Table 2

type	CI/ nF	LI/ µH	T <sub>amb</sub> / °C	type	CI/ nF	LI/ µH	T <sub>amb</sub> / °C
CBN2-F46-N...	45	0	-25	NJ 2-V3-N...	40	50	-25
CCN2-F46A-N...	45	0	-25	NJ 15+U...+N...	140	130	-25
CBN5-F46-N...	45	0	-25	NJ 20+U...+N...	150	130	-25
CCN5-F46A-N...	45	0	-25	NJ 30+U...+N...	160	130	-25
CBN10-F46-N...	45	0	-25	NJ 40+...+N...	180	130	-25
CCN10-F46A-N...	45	0	-25	NJ 50-FP-N...	320	360	-25
CCB10-30GM...-N...	155	0	-25	SC2-NO...	150	150	-25
CJ 1-12GK-N...	80	0	-25	SC3,5-NO-Y...	150	150	-25
CJ 2-18GK-N...	80	0	-25	SC3,5...-NO...	150	150	-25
CJ 4-12GK-N...	80	0	-25	SJ 1,8-N-Y...	30	100	-25
CJ 8-18GK-N...	80	0	-25	SJ 2,2-N...	30	100	-25
CJ 15-40-N...	140	0	-25	SJ 2-N...	30	100	-25
CJ 40-FP-N...	145	0	-25	SJ 3,5...-N...	50	250	-25
NCB1,5...M...NO...	90	100	-25	SJ 5...-N...	50	250	-25
NCB2-12GM...-NO...	90	100	-25	SJ 5-K...	50	550	-25
NCM4-12GM...-NO...	95	100	-25	SJ 10-N...	50	1000	-25
NCB5-18GM...-NO...	95	100	-25	SJ 15-N...	150	1200	-25
NCM8-18GM...-NO...	95	100	-25	SJ 30-N...	150	1250	-25
NCB10-30GM...-NO...	105	100	-25	NJ 2-11-SN...	50	150	-40
NCN15-30GM...-NO...	110	100	-25	NJ 2-11-SN-G...	50	150	-40
NJ 1,5-6,5...-N	30	50	-25	NJ 2-12GK-SN...	50	150	-40
NJ 1,5-9-N...	20	50	-25	NJ 3-18GK-S1N...	70	200	-25
NJ 2-11-N...	45	50	-25	NJ 4-12GK-SN...	70	150	-40
NJ 2-11-N-G...	30	50	-25	NJ 5-18GK-SN...	120	200	-40
NJ 5-11-N...	45	50	-25	NJ 5-30GK-S1N...	100	200	-25
NJ10-22-N...	130	100	-25	NJ 6-22-SN...	110	150	-40
NJ10-22-N-E93-Y106925	130	100	-40	NJ 6-22-SN-G...	110	150	-40
NJ10-22-N-E93-Y30629	130	100	-25	NJ 8S1+U...+N...	180	150	-40
NJ10-22-N-E93-Y52737	130	100	-25	NJ 8-18GK-SN...	120	200	-40
NCB2-F1-NO...	90	100	-25	NJ 10-30GK-SN...	120	150	-40
NCB2-V3-NO...	100	100	-25	NJ 15-30GK-SN...	120	180	-40
NCM4-V3-NO...	100	100	-25	NJ 15S+U...+N...	180	150	-40
NCB15+U...+NO...	110	180	-25	NJ 20S+U...+N...	200	150	-40
NCB40-FP-NO...	220	360	-25	NJ 40-FP-SN...	370	300	-40
NCN15-M...-NO...	100	100	-25	SJ 2-SN...	30	100	-40
NCN20+U...+NO...	110	160	-25	SJ 2-S1N...	30	100	-25
NCN30+U...+NO...	110	160	-25	SJ 3,5-S1N...	30	100	-25
NCN40+U...+NO...	120	130	-25	SJ 3,5-SN...	30	100	-40
NCN50-FP-NO...	220	360	-25				

The indicated values of internal capacitances and inductances do consider a supply cord of 10 m length.

Sheet 3/5

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**Enclosure 4:**



**Prüf- und Zertifizierungsstelle**

**ZELM Ex**



**GB**

**Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0128 X**

**References:**

The instruction manual has to be considered, in particular for the mounting conditions, supply circuit and operating temperatures.

(16) **Report No.**

ZELM Ex 0840217167

(17) **Special conditions for safe use**

1. The correlations between type of connected circuit, maximum ambient temperature and surface temperature and the effective internal capacitances and inductances of the various sensor types are shown in the tables of clause (15).
2. The sensor supply must be made by separately certified intrinsically safe circuits. Because of possible ignition hazards, which can arise from faults and/or transient circulating currents in the potential equalization system, galvanic isolation in the supply and signal circuits is preferred. Associated apparatus without galvanic isolation may only be used whether the appropriate requirements according to IEC 60079-14 are met.
3. Operational electrostatic charges due to medium flow or mechanical rubbing must be excluded, if the charge-exposed plastic surface area is greater than approx. 100 cm<sup>2</sup> to avoid brush discharges.

4. For sensor types

CJ 40-FP-N...	NCN40-U...+NO...	NJ 40-U...+NL...	SJ 30-N...
NCB40-FP-NO...	NCN50-FP-NO...	NJ 50-FP-N...	NJ 40-FP-SN...

and applications with high charges to be expected (e.g. spray gun for paints, film material production, dust conveyors, machine frictional processes) the charge-exposed plastic surface area must be reduced to approx. 15 cm<sup>2</sup> by installation measures to avoid propagating brush discharges.

5. Hazardous electrostatic charges of metallic parts must be prevented. This can be made by connection to the local equipotential bonding, but very small metallic parts (e.g. screws) must not be earthed.
6. The tightness for the purposes of zone seal measures for the mounting across the boundary between different zones is not covered by this Certificate and must be ensured by appropriate measures of installation.

Sheet 4/5

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Enclosure 4:



Prüf- und Zertifizierungsstelle

ZELM Ex



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Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0128 X

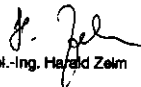
(18) Essential Health and Safety Requirements

Met by above mentioned draft standards in accordance with Directive 94/9/EC. The sensors adhere to the standards EN 50014 and EN 50020. For dust atmospheres no harmonised european standards are available at the moment.

Zertifizierungsstelle ZELM Ex



Braunschweig, March 28, 2003

  
Dipl.-Ing. Harald Zelm

Sheet 5/5

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