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 0154

(4) Equipment: **Field data processor type promonitor NRF 56.-...**

(5) Manufacturer: **Sakura Endress Co. Ltd.**

(6) Address: **J – 406 Yamanashi P., Japan**

(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 0410317195.

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

EN 50 014: 1997+A1+A2 **EN 50 018: 1994** **EN 50 019: 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, 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 2 G EEx d IIC T4 resp. EEx de IIC T4

Zertifizierungsstelle **ZELM Ex**

Dipl.-Ing. Harald Zelm

Zertifizierungsstelle ZELM Ex

Braunschweig, June 25, 2003

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

(13) # SCHEDULE

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0154**

(15) Description of equipment

The Field data processor type promonitor NRF 56.-... is designed for evaluation and display of signals received from remotely installed sensors.

The electronic circuits are mounted into an enclosure type PRO-LINE.

Type code

Field data processor promonitor NRF 560-abcde

a = 7 , EEx d IIC T4 (ATEX)
b = Cable entry
c = Power supply
d = Mounting bracket
e = Painting

or promonitor NRF 561-abcdefg

a = 7 , EEx d IIC T4 (ATEX)
b = Digital output
c = Sensor input
d = Cable entry
e = Power supply
f = Mounting bracket
g = Painting

Electrical data

Supply circuit:

NRF High voltage Input Version	
Terminals: 1(L+), 3(N-), 5(GND)	85 V ... 264 V AC +10% , max. 25 VA
NRF Low voltage Input Version	
Terminals: 1(L+), 3(N-), 5(GND)	19 V ... 55 V AC, max. 25 VA
or	
Terminals: 1(L+), 3(N-), 5(GND)	19 V ... 62 V DC, max. 25 W

Interface circuits:

Terminals: 11 – 20	U_{max} = 24 V / I_{max} = 100 mA
Maximum ambient temperature	T_a = - 40 °C to + 60 °C
Degree of protection:	at least IP 54 according to EN 60529:1991

Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0154

References:

The instruction manual has to be considered, in particular the sufficient equipotential bonding and grounding and the overvoltage protection.

The equipment with the type of protection "EEx d" is to be connected via cable glands or conduit systems suitable for that purpose, which meet the requirements of sections 13.1 and 13.2 of EN 50 018 and for which a separate certificate has been issued including the required ambient temperature range. Openings which are not used have to be closed in compliance with section 11.9 of EN 50 018. Cable glands and stopping plugs of simple design must not be used. Connecting the equipment via a conduit entry approved for that purpose, the associated conduit seal has to be located right next to the housing.

If the terminal room is built with the type of protection EEx e, only cable glands and stopping plugs according to EN 50 019 are to be used.

Wiring cable of the equipment has to be installed rigidly and sufficiently protected against damage.

The routine test in compliance with section 16.1 of EN 50 018 is only to be applied to equipment, which is intended to the extended ambient temperature range of – 40 °C. That equipment has to be statically overpressure tested using 33.1 bar.

This EC-type-examination certificate or the herein specified technical data respectively are to be accompanied to each produced equipment in appropriate manner.

(16) Report No.

ZELM Ex 0410317195

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle **ZELM Ex**

Dipl.-Ing. Harald Zelm

Zertifizierungs- und Prüf- stelle ZELM Ex

Braunschweig, June 25, 2003

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Prüf- und Zertifizierungsstelle

ZELM Ex

2. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 03 ATEX 0154

Equipment: **Field Data Processor Type Promonitor NRF 56.-...**

Manufacturer: **Endress + Hauser Japan Co., Ltd.**

Address: **J-406 Yamanashi P., Japan**

Description of supplement

The 2. Supplement to EC-type-examination Certificate was necessary concerning changing of the production structure code of the equipment.

The production structure code is in the future:

Field Data Processor

Promonitor NRF 560-abcde		**or**	**Promonitor NRF 561-abcdefg**	
a =	6, EEx d IIC T4 (ATEX)		a =	6, EEx d IIC T4 (ATEX)
b =	Cable entry		b =	Digital output
c =	Power supply		c =	Sensor input
d =	Mounting bracket		d =	Cable entry
e =	Painting		e =	Power supply
			f =	Mounting bracket
			g =	Painting

The type of protection, the electrical data and all further data remain unchanged and are applied also for this 2. Supplement.
The Field Data Processor Type Promonitor NRF 56.-... may only be manufactured in future in accordance with this Supplement.

Report No.

ZELM Ex 0930517408

Essential Health and Safety Requirements

The Essential Health and Safety Requirements are further met by adherence to the standards referred in the EC-type-examination certificate.

Zertifizierungsstelle ZELM Ex

Dipl.-Ing. Harald Zelm

Zertifizierungsstelle und Prüf- ZELM Ex ZELM Ex

Braunschweig, July 26, 2005

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3. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 03 ATEX 0154

Equipment:	Field Data Processor Type Promonitor NRF 56.-...
Manufacturer:	Sakura Endress Co., Ltd.
Address:	J-406 Yamanashi P., Japan

Description of supplement

The 3. Supplement to EC-type-examination Certificate was necessary concerning only the change of the manufacturer name.

The manufacturer name is in the future:

Manufacturer: Endress + Hauser Yamanashi Co.,Ltd

The address, type of protection, the electrical data and all further data remain unchanged and are applied also for this 3. Supplement.

The Field Data Processor Type Promonitor NRF 56.-... may only be manufactured in future in accordance with this Supplement.

Report No.

ZELM Ex 0340826615

Essential Health and Safety Requirements

The Essential Health and Safety Requirements are further met by adherence to the standards referred in the EC-type-examination certificate.

Zertifizierungsstelle **ZELM** Ex

Dipl.-Ing. Harald Zelm

Zertifizierungs- und Prüf- stelle ZELM Ex

Braunschweig, May 28, 2008

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4. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

ZELM ex

to EC-type-examination Certificate

ZELM 03 ATEX 0154

Equipment:	**Field Data Processor Type promonitor NRF 56.-...**
Manufacturer:	**Endress+Hauser Yamanashi Co.,Ltd.**
Address:	**J – 406 Yamanashi P., Japan**

Description of supplement

Within the scope of this 4. Supplement the agreement of the device with the current standards has been checked and the marking of the device has been adapted correspondingly.

The marking of the equipment is in the future:

II 2G Ex d IIC T4 resp. II 2G Ex de IIC T4

The type of protection, all other data and special condition for safe use remain unchanged and are also applied for this 4. Supplement.

The equipment may be manufactured in future also in accordance with this 4. Supplement.

Report No.

ZELM Ex 1940817658

Essential Health and Safety Requirements

The essential health and safety requirements are still fulfilled by compliance with the following Standards:

EN 60079-0:2006 EN 60079-1:2007 EN 60079-7:2007

Braunschweig, November 20, 2008

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Dipl.-Ing. Harald Zelm

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5. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

ZELM ex

to EC-type-examination Certificate

ZELM 03 ATEX 0154

Equipment:	**Field Data Processor Type promonitor NRF 56.-...**
Manufacturer:	**Endress+Hauser Yamanashi Co.,Ltd.**
Address:	**J – 406 Yamanashi P., Japan**

Description of supplement

Within the scope of the 5th Supplement changes of the inner construction were concerned, as well as changes of the type designation code and some versions won't be considered furthermore. Also the compliance of the equipment to the current Standards was checked.

The marking of the device will be in future as follows:

II 2 G Ex d IIC T4

The type designation code changes as follows:

NRF560 – a b c d e

a – Protection class
- 6: ATEX
- 8: ATEX + W&M NMI

b – Cable entry
- B: two NPT 1/2 " thread
- C: two PG16 thread
- D: two M20 thread

c – Power supply
- 3: 85 – 264 VAC, 50/60 Hz, 25VA
- 4: 20-60V DC, 25 W / 20-55 VAC, 50/60 Hz, 25 VA

d – Mounting Bracket

e – Painting

The type NRF561-abcdefg won't be considered furthermore.

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Because of the different cable entries and therefore the use of different sized cable glands, the following Special conditions for safe use have to be regarded. The certificate number will be extended by the letter "X" and will be in future as follows:

ZELM 03 ATEX 0154 X

The ambient temperature range, as well as all other date, stated inside the EC-Type-Examination certificate ZELM 03 ATEX 0154 for the Field Data Processor Typ promonitor NRF 560-abcde, will not be changed and are valid furthermore.

Report No.

ZELM Ex 1131219938

Special conditions for safe use

1. The type of protection of the apparatus depends on the proper selection and installation of the Cable Glands or blanking elements. It is only allowed to use cable glands or blanking elements, which comply with the following standards EN 60079-0:2009 and EN 60079-1:2007 and which are certified with a separate EC-Type-Examination Certificate at least for the same range of ambient temperature as the complete Field Data Processor Typ promonitor NRF 560-abcde according to this 5th supplement to EC-Type-Examination Certificate ZELM 03 ATEX 0154 X.
2. It is important, that the threads (size and form) of the glands are properly selected according to the appropriate model. The Differentiation is realized by the type code.
3. Each entry shall have only the installed thread adapter. A blanking element shall not be used with this adapter. The used blanking elements shall have a thread size of M26x1.5.
4. The operating manual, as well as the Safety Instructions shall be observed.

The Field Data Processor Typ promonitor NRF 560-abcde shall be manufactured in future only under consideration of this supplement.

Essential Health and Safety Requirements

The essential Health and Safety Requirements are fulfilled by compliance with the following Standards:

EN 60079-0:2009 **EN 60079-1:2007**

Braunschweig, 2012-09-14

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