



(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 03 ATEX 2241 X

(4) Equipment: Power supply units, types PD 791 and PD 792

(5) Manufacturer: PROCES-DATA A/S

(6) Address: Navervej 8-10, 8600 Silkeborg, Denmark

(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 03-22197 .

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

EN 50014:1997 + A1 + A2
EN 50028:1987

EN 50019:2000

EN 50020:2002

(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 in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

II 2 G EEx m e [ia] IIB T4

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, December 18, 2003

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2241 X

(15) Description of equipment

The power supply units, types PD 791 and PD 792 are used for the supply and the data-communication of associated modules in the hazardous area. The power supply units of types PD 792 are additionally equipped for communication with a P-NET light link.

The maximum permissible range of the ambient temperature is -25 °C up to +50 °C.

Electrical data

	Types PD 791 and PD 792
Supply circuit (terminals VIN+ (1 & 2), VIN- (3 & 4))	$U_n = 24 \text{ V}$ $U_m = 30 \text{ V}$
	Types PD 791 and PD 792
Signal circuit (terminals 5 through 8)	type of protection Intrinsic Safety EEx ia IIB Maximum values: $U_o = 13.7 \text{ V}$ $P_o = 2.7 \text{ W}$ $I_o = 470 \text{ mA}$ $R = 49.5 \text{ } \Omega$ trapezoidal characteristic Li negligibly low (types PD 791 and PD 792) Ci negligibly low (type PD 791) Ci = 110 nF (type PD 792)

	PD 791				PD 792			
L_o / mH	0.9	0.5	0.2	0.1	0.9	0.5	0.2	0.1
$C_o / \mu\text{F}$	2.1	3.0	4.6	5.0	2.0	2.9	4.5	4.9

	Type PD 792
Optical waveguide terminal	type of protection Intrinsic Safety EEx ia IIB for connection to the associated optical fibre

The signal circuit is safely electrically isolated from all other circuits up to a peak value of the nominal voltage of 30 V.

(16) Test report PTB Ex 03-22197

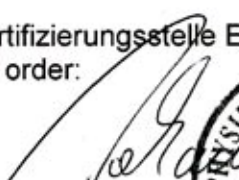
(17) Special conditions for safe use

The power supply units, types PD 791 or PD 792 shall be mounted into a housing of type of protection „e“, „d“ or „p“.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, December 18, 2003



(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 04 ATEX 2001 X

(4) Equipment: P-NET Controller, type PD-4000/4095

(5) Manufacturer: PROCES-DATA A/S

(6) Address: 8600 Silkeborg, Denmark

(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 04-23294.

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

EN 50014:1997 + A1 + A2

EN 50020:2002

(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 in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

 **II 2 G EEx ia IIB T4**

Zertifizierungsstelle Explosionsschutz

Braunschweig, January 30, 2004

By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2001 X

(15) Description of equipment

The P-NET controller, type PD-4000/4095 consists of the PD 4095 (intrinsically safe supply unit with a 4-wire P-NET interface) and the PD 4000 display unit which is supplied from the PD 4095. The P-NET controller is installed in the hazardous area.

The permissible range of the ambient temperature is -25 °C up to + 65 °C.

Electrical data

Supply- and signal
circuit

type of protection Intrinsic Safety EEx ia IIB
only for connection to a certified intrinsically safe circuit with the
following maximum values:

$$U_i = 13.9 \text{ V}$$

$$P_i = 2.9 \text{ W}$$

$$L_i = 2 \text{ } \mu\text{H}$$

$$C_i = 110 \text{ nF}$$

(16) Test report PTB Ex 04-23294

(17) Special conditions for safe use

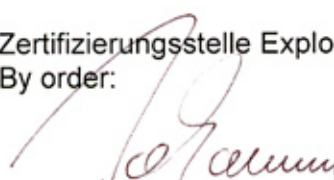
The P-NET controller, type PD-4000/4095 including its connection facilities shall be installed as such that at least the degree of protection IP 20 according to EN 60529 is met.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, January 30, 2004

sheet 2/2



(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 05 ATEX 2042



(4) Equipment: Display module type PD 781

(5) Manufacturer: Proces-DATA A/S

(6) Address: Navervej 8, 8600 Silkeborg, Danmark

(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 05-25099.

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

EN 50014:1997 + A1 + A2

EN 50020:2002

(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 in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

 **II 2 G EEx ia IIB T4**

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Gerlach
Regierungsrat



Braunschweig, July 27, 2005

(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2042

(15) Description of equipment

The display module type PD 781 is used for the visualization and data communication with P-NET applications in the explosion hazardous area.

The max. permissible ambient temperature range is -25 bis + 65 °C.

Electrical Data

Supply and signal

Circuit

(4-wire p-net, digital I/O)

Type of protection Intrinsic Safety EEx ia IIB

For connection to a certified intrinsically safe circuit.

Maximum values:

$$U_i = 13.9 \text{ V}$$

$$I_i = 470 \text{ mA}$$

$$P_i = 2.8 \text{ W}$$

$$L_i = 10 \text{ } \mu\text{H}$$

$$C_i = 1350 \text{ nF}$$

or

For connection to the power supplies types PD 791 and PD (PTB 03 ATEX 2241 X)

Optical wave guide

connector

Type of protection Intrinsic Safety EEx ia IIB

For connection to the accompanying optical fibre.

(16) Test report PTB Ex 05-25099

(17) Special conditions for safe use


none

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Gerlach
Regierungsrat



Braunschweig, July 27, 2005

sheet 2/2