BA_0912W5_EN

• General

The electrical temperature controller ETR 5-80 is equipment and protective system intended for use in potentially explosive atmospheres.
The temperature switch can be used in areas in which an explosive atmosphere occurs in operation occasionally (Zone 1). The mixture can either be consisting of air together with flammable substances in the form of gas/vapor or with a cloud of combustible dust (G/D).

EU-Type Certificate :	PTB 06 ATEX 2041 X
EAC-Ex-Certifikate :	RU C-DE.EX01.B.00032/19

Marking: CE 2004 Ex Ex II 2 G Ex mb db IIC T4 Gb
II 2 D Ex tb IIIC T130°C Db

• Function

The electronic temperature controller ETR 5-80 is intended for controlling the ambient temperature by heaters in protection boxes and switchgear cabinets.
The control system is embedded in a heavy aluminum enclosure. The connection cable is fixed with the enclosure. An additional junction box is necessary to connect the controller with the heater.
The temperature sensor is fixed with a flexible cable to the controller.
The temperature adjustment is provided by a potentiometer inside the controller enclosure.
Setpoint range from +5°C up to +80°C.

• Technical Data

Rated voltage:	250VAC (115VAC possible)
Rated current:	6A (ohmic load)
Rated power:	70 – 1500W (bei 125VAC: 70-750W)
Connection cable:	SIHF 4 x 1 mm², 3 m long
Sensor cable:	SIHF 2 x 0,75, 1 m long
Dim.:	L x W x H 74 x 78 x 56 mm
Weight:	0,5 kg
Ambient temp.:	-50°C to +80°C
Operating temp.:	-50°C to +120°C
Protection degree:	IP 68

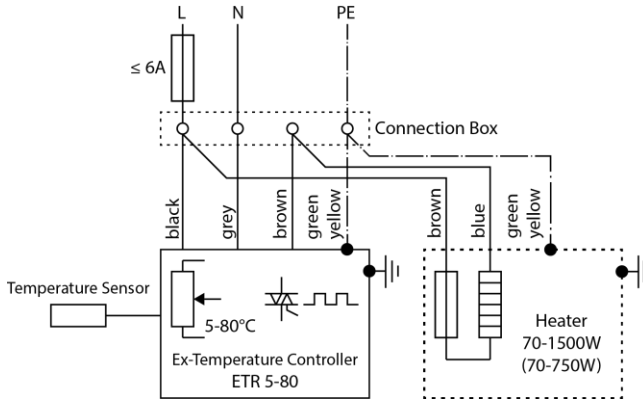
For installation and operation it is essential to follow this Manual and the relevant national regulations in addition to generally accepted good engineering practice and the IEC 60079-14 „Electrical installation design, selection and erection“.
The specified rated data on the type plate of the temperature controller plate must always be taken in account.

• Mounting

The aluminum enclosure of the ETR 5-80 has two diagonal bore holes for attaching to mounting plate. The mounting position of the controller can be randomly chosen.
Fix the temperature sensor with a suitable clamp to that place of the cabinet, were the temperature should be controlled.
During disassembly, turn off the power supply, remove the electrical connections and remove the mounting screws.

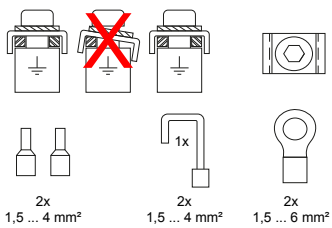
• Commissioning

The electric temperature controller ETR 5-80 is delivered operable from the manufacture. The connecting cable of the ETR 5-80 is foreseen to be joined in a junction box according to wiring diagram. The junction box must comply with the requirements of an approved type of protection according to IEC 60079-0, if the connection is in a hazardous area.
The ETR 5-80 is intended for stationary installation, so the connection cable must be protected against mechanical damage.
The equipotential bonding and earthing shall be ensured by connecting the ETR 5-80 to the entire system.



• Electrical Protection

Line and short circuit protection
The switch-off and electrical isolation of all circuit power supply conductors including the neutral should be done by Miniature Circuit Breaker (MCB) in a switchgear. The rated current must be limited to 6A.
In a TT or TN system also a compact protection device (RCBO) which combine the overcurrent function of a MCB with the earth fault functions of a RCD can be used.
Potential equalization
At the metallic housing of the ETR 5-80 is a protective conductor connection for connecting to the external potential equalization. The potential bonding conductor shall be connected as shown. When connecting two conductors, they must have the same size.



• Operating, Maintenance

Devices in hazardous area must be installed, supervised, maintained and kept in good conditions by the owner of the plant. For information, refer to IEC 60079-17. Only skilled workers are allowed to do maintenance and the elimination of disturbance work. Do not perform any independent repair of defective temperature controllers, but send it back to SCHRAMM. Unauthorized repairs and disassembly will automatically eliminate warranties and liabilities.

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(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 06 ATEX 2041 X

(4) Equipment: Electronic fixed setpoint temperature controller, type EFWTR-10-80

(5) Manufacturer: Schramm GmbH

(6) Address: Flinschstr. 18a, 60388 Frankfurt, Germany

(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 06-26030 .

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

EN 60079-0:2004 **EN 60079-18:2004** **EN 50281-1-1:1998**

(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 Ex ma II T4

II 2 D IP 65 T130 °C

Zertifizierungsstelle Explosionsschutz
By order:

(signature)

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, October 13, 2006

3 pages, correct and complete as regards content.
By order:

Dr.-Ing. Johannsmeyer Braunschweig, February 22, 2008
Direktor und Professor

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2041 X

(15) Description of equipment

The electronic fixed setpoint temperature controller, type EFWTR-10-80 is used for the temperature control of electric heaters having a power consumption (ohmic load) up to 10 A . It is intended for installation inside the hazardous area of zone 1.

The temperature to be monitored is detected by a temperature sensor which is connected permanently to the fixed setpoint temperature controller using a connecting cable. Thus the temperature sensor and the fixed setpoint temperature controller form a unit.

The temperature to be controlled depends on the model used. Depending on the temperature to be controlled the models are manufactured as 8 variants ranging from 10 °C up to 80 °C in intervals of 10 K.

The temperature controller is delivered with a cable length of 1 m or 2 m and it is exclusively intended for fixed installation where the connecting cables are to be protected against mechanical damage.

The mounting orientation may be chosen without restrictions.

Electrical data

Operating voltage	250 V 50 Hz ... 60 Hz	AC
Nominal current	20 mA	
Maximum switching current	10 A	(ohmic load)
Switching capacity	200 W ... 2000 W	(ohmic load)
	or	
Operating voltage	125 V 50 Hz ... 60 Hz	AC
Nominal current	20 mA	
Maximum switching current	10 A	(ohmic load)
Switching capacity	100 W ... 1000 W	(ohmic load)

(16) Test report PTB Ex 06-26030

(17) Special conditions for safe use

1. The connecting cable shall be connected inside of an enclosure which meets the requirements of an acknowledged type of protection according to EN 60079-0:2004 clause 1 if the connection is carried out inside the hazardous area.
2. An external 16 A fuse must be connected in series to each temperature controller as short-circuit protection. The rated voltage of the fuse shall be higher than or equal to the indicated rated voltage of the temperature controller. The breaking capacity of the fuse-link shall be equal to or higher than the prospective maximum short-circuit current at the place of installation (usually 1500 A). The fuse may be located inside the associated supply unit or has to be connected in series separately.
3. The temperature sensor shall be installed as such that the point of connection is free from tensile force, buckling stress and torsional stress. The enclosure of the temperature sensor shall be included in the general equipotential bonding system of the surrounding installation.
4. The permissible ambient temperature ϑ_{amb} of the temperature controller, type EFWTR-10-80 is $-40\ °C \leq \vartheta_{amb} \leq +80\ °C$.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

(signature)

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, October 13, 2006

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. S U P P L E M E N T

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2041 X

(Translation)

Equipment: Electronic fixed setpoint temperature controller, types EFWTR-10-80 and ETR 5-80

Marking: ⟨Ex⟩ **II 2 G Ex ma II T4 und II 2 D IP 65 T130 °C**

Manufacturer: Schramm GmbH

Address: Flinschstr. 18a, 60388 Frankfurt, Germany

Description of supplements and modifications

The electronic fixed setpoint temperature controller is used for the temperature control of electric heaters having a power consumption (ohmic load) up to 6 A. It is intended for installation inside the hazardous area of zone 1 or zone 21 respectively, in a temperature range from - 50 °C up to + 80 °C. A new type of casting compound is used for this purpose.

The temperature to be monitored is detected by a temperature sensor which is permanently connected to the fixed setpoint temperature controller by means of a connecting cable having an optional length of 1 m or 2 m.

The temperature to be controlled depends on the model used. The EFWTR-10-80 models are manufactured as 8 variants ranging from 10 °C up to 80 °C in intervals of 10 K corresponding to the temperature to be controlled. The ETR 5-80 model is provided with a potentiometer located inside the enclosure to adjust the desired temperature in a range between 5 °C and 80 °C.

The temperature controller is manufactured for the operation with two different nominal voltages.

Electrical data

Nominal voltage	250 V	50 Hz ... 60 Hz
Nominal current	20 mA	
Maximum switching current	6 A	(ohmic load)
Switching capacity	70 W ... 1500 W	(ohmic load)
	or	
Nominal voltage	125 V	50 Hz ... 60 Hz
Nominal current	20 mA	
Maximum switching current	6 A	(ohmic load)
Switching capacity	70 W ... 750 W	(ohmic load)

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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2041 X

Special conditions for safe use

1. The connecting cable shall be connected inside of an enclosure which meets the requirements of an acknowledged type of protection according to EN 60079-0:2006 if the connection is carried out inside the hazardous area.
2. An external 6 A fuse corresponding to IEC 60127-1 must be connected in series to each temperature controller as short-circuit protection. The rated voltage of the fuse shall be higher than or equal to the indicated rated voltage of the temperature controller. The breaking capacity of the fuse-link shall be equal to or higher than the prospective maximum short-circuit current at the place of installation (usually 1500 A). The fuse may be located inside the associated supply unit or has to be connected in series separately.
3. The temperature sensor shall be installed as such that the point of connection is free from tensile force, buckling stress and torsional stress.
4. The enclosure of the temperature sensor shall be included in the general equipotential bonding system of the surrounding installation.

In the future the electronic fixed setpoint temperature controller, type EFWTR-10-80 shall be marked as follows:

II 2 G Ex mb IIC T4

II 2 D Ex tD A21 IP65 T130 °C

In the future the electronic fixed setpoint temperature controller, type ETR 5-80 shall be marked as follows:

II 2 G Ex mb d IIC T4

II 2 D Ex mbD tD A21 IP68 T130 °C

Applied standards

EN 60079-0:2006, EN 60079-1:2006, EN 60079-18:2004,
EN 61241-0:2006, EN 61241-1:2004, EN 61241-18:2004

Assessment and test report: PTB Ex 10-29073

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, February 23, 2010

EU-Konformitätserklärung
EU-Declaration of Conformity

Wir/We	**Schramm GmbH** **Flinschstr. 18 a** **60388 Frankfurt am Main** **Germany**
erklären in alleiniger Verantwortung, dass das Produkt	**Elektronischer Temperaturregler** **Typ ETR 5-80**
bearing sole responsibillity, hereby declare that the product	Electronic temperature controller Type ETR 5-80

auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder normativen Dokument(en) übereinstimmt. Auch wenn die in der EU-Baumusterprüfbescheinigung angewandten Normen nicht den neuesten Ausgaben der heute gültigen Normen entsprechen, erfüllt das Produkt die Grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie.

which is the subject of this declaration, is in conformity with the following standards or normative documents. As well the named standards of the EU-Type-Examination Certificate are not the newest issue of the standard which is valid today, the equipment fulfils the Essential Health and Safety Requirements of the Directive

Bestimmung der Richtlinie Provisions of the directive	**Titel und/oder Nummer sowie Ausgabe der Norm(en)** Titel and/or No. and class of issue of the standard(s)
2014/34/EU: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen 2014/34/EU: Equipment and protective systems intended for use potentially explosive atmospheres	**EN IEC 60079-0:2018** **EN 60079-18:2015** **EN 60079-31:2014**
EG Baumusterprüfbescheinigung: EC-Type-Examination Certificate:	**PTB 06 ATEX 2041 X** Physikalisch-Technische Bundesanstalt, 0102
Kennzeichnung: Marking:	**II 2 G Ex mb db IIC T4 Gb** **II 2 D Ex tb IIIC T130°C Db**
Qualitätssicherung Produktion: Production Quality Assessment:	**Bureau Veritas, benannte Stelle 2004** Bureau Veritas, notified body 2004
2014/30/EU: **Elektromagnetische Verträglichkeit** 2014/30/EU: Electromagnetic compatibillity	**EN 61000-6-4:2007 + A1:2011**
Frankfurt, 16. Juli 2021 **Ort und Datum** Place and Date	Dipl. Ing. Robin Schramm **Qualitätsleitung** Quality Management