



SITRANS TK-L  
7NG3120-0, 7NG3122-0

Edition 01/2003

.....

Transmitter for temperature (Pt100)  
Operating instructions .....

SIMATIC®, SIPART®, SIPROM®, SIREC®, SITRANS®  
sind eingetragene Marken der Siemens AG.

Die übrigen Bezeichnungen in diesem Handbuch können Marken sein, deren Benutzung durch Dritte für deren Zwecke die Rechte der Inhaber verletzen können.

SIMATIC®, SIPART®, SIPROM®, SIREC®, SITRANS®  
are registered trademarks of Siemens AG.

All other product or system names are (registered) trademarks of their respective owners and must be treated accordingly.

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhaltes nicht gestattet, soweit nicht ausdrücklich zugestanden.

Zu widerhandlungen verpflichten zu Schadenersatz. Alle Rechte vorbehalten, insbesondere für den Fall der Patenterteilung oder GM-Eintragung.

Technische Änderungen vorbehalten.

The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights created by the granting of patents or registration of a design are reserved.

Technical data subject to change without notice

# Contents

<b>1</b>	<b>Technical Description</b>	<b>21</b>
1.1	Area of Application	21
1.2	Product feature	21
1.3	Operating principle	22
1.4	Technical data	23
1.5	Ordering data	25
1.6	Dimensions	25
<b>2</b>	<b>Installation</b>	<b>26</b>
2.1	Installation in the terminal housing	26
2.2	Electrical connection	27
<b>3</b>	<b>Commissioning</b>	<b>29</b>
3.1	Functions	29
3.2	Output current in the event of a fault	29
3.3	Open-circuit monitoring	29
3.4	Line compensation	29
<b>4</b>	<b>Operation with a PC/Laptop</b>	<b>30</b>
<b>5</b>	<b>Maintenance</b>	<b>31</b>
<b>6</b>	<b>Certificates</b>	<b>32</b>
6.1	EC Declaration of conformity	32
6.2	EC Type Examination Certificates	34

## General Security Notes



---

### DANGER

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

---



---

### WARNING

indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

---



---

### CAUTION

used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

---

---

### CAUTION

used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

---

---

### NOTICE

NOTICE used without the safety alert symbol indicates a potential situation which, if not avoided, may result in an undesirable result or state.

---



---

### NOTE

indicates a reference to a possible advantage when this recommendation is followed.

---

## Safety Information



---

### NOTE

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency that may arise during installation, operation or maintenance.

Should further information be desired or should particular problems arise that are not covered sufficiently for the Purchaser's purposes, the matter should be referred to the local Siemens Sales Office.

The contents of this instruction manual shall not become part of or modify any prior or existing agreement, commitment or relationship. The Sales Contract contains the entire obligations of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties or modify the existing warranty.

---



---

### WARNING





This equipment should only be installed and operated after qualified personnel have ensured that suitable power supplies are available. These personnel must ensure that the equipment is not subjected to any hazardous voltages during normal operation or when a defect occurs in the system.

The successful and safe operation of this equipment is dependent upon its proper handling, installation, operation and maintenance.

---

### *Qualified person*

For the purposes of this manual, a qualified person is one who is familiar with the installation, commissioning and operation of this equipment. In addition, the person must be:

-  Trained and authorised to operate and service equipment/systems in accordance with established safety practices relating to electrical circuits, high pressures and aggressive media.
-  Trained in the proper care and use of protective equipment in accordance with established safety practices.
-  Trained in rendering first aid.
-  In the case of explosion-protected devices: trained or instructed or authorised to perform work on electrical circuits for explosion-protected systems.

# 1 Technical Description

## 1.1 Area of Application

The SITRANS TK-L transmitter can be used to measure resistance-based thermometers Pt100 in all branches of industry. Thanks to its compact size, it can be installed in the type B or larger terminal housing (DIN 43729).

The output signal is an impressed direct current from 4 to 20 mA that corresponds to the sensor characteristic.

Transmitters belonging to the "type of protection: Non incendive" type can be installed in explosion hazard areas (Zone 2). Transmitters of type "intrinsically safe type of protection" can be installed in explosion hazard areas (zone 1). The conformity certificates correspond to the European standard (CENELEC).

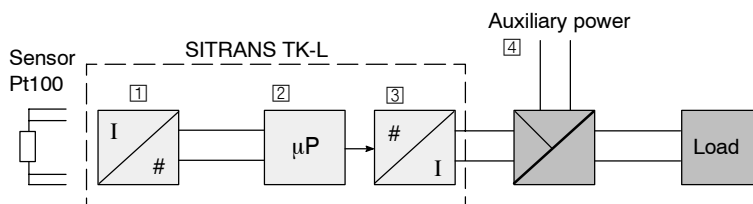
## 1.2 Product feature

- Two-wire transmitter
- Can be installed in a terminal housing type B or larger (DIN 43729)
- Programmable; the sensor input connection, the measurement range and many other parameters are therefore programmable
- Intrinsically safe type for use in hazardous areas

### 1.3 Operating principle

The measured signal supplied by a resistance thermometer Pt100 (2, 3 or 4-wire connection) is amplified in the input stage. The voltage, which is proportional to the input quantity, is then converted to digital signals in an analog/digital converter [1]. In the microprocessor [2] they are converted in accordance with the sensor characteristic and further parameters (measuring range, attenuation and line resistance etc.).

The signal prepared in this way is converted in a digital/analog converter [3] to an impressed direct current of 4 to 20 mA. The auxiliary power [4] source is located in the output signal circuit.



- [1] Analog/digital converter
- [2] Microcontroller
- [3] Digital/analog converter
- [4] Auxiliary power source

Figure 1 Block diagram: operating principle of the SITRANS TK-L



## 1.4 Technical data

### Input

#### Resistance thermometer

Measured variable	Temperature
Type of Input	Pt100 (DIN IEC 751)
Characteristic	Temperature-linear
Type of connection	2, 3 or 4-wire connection
Resolution	14 bit
Accuracy of measuring	
Measuring span <250 °C	<0.25 °C (<0.45 °F)
Measuring span >250 °C	<0.1 % of measuring span
Repetition	<0.1 °C (<0.18 °F)
Measuring current	0.3 mA
Measuring cycle	<0.7 s
Measuring range	-200 to 850 °C (-328 to 1562°F)
Measuring span	>25 °C (>45 °F)
Unit	°C or °F
Offset	Programmable, max. 10°C (18°F)
Line resistance	Max. 20 Ohm/line
Overload capacity	± 35 V DC
Interference suppression	50 and 60 Hz

### Output

#### Output signal

Auxiliary power	4 to 20 mA, 2-wire
Overrange	8 to 35 V DC (28 V for Ex)
Time of filtering	3.5/23 mA (programmable)
Protection	0 to 30 s
Resolution	Against reverse battery
Accuracy	12 bit
Influence of power supply	<0.1 % of measuring span
Temperature drift	<0.01 % of measuring span/V
	Typical 0.003 %/°C (max. 0.01 %/°C)
	(Typ. ± 0.00166 %/°F; ± 0.0055 %/°F)

**Ambient conditions**

Ambient temperature range	–40 to +85 °C (–40 to +185 °F)
Storage temperature range	–40 to +85 °C (–40 to +185 °F)
Relative humidity	≤ 98 %, with condensation

**Electromagnetic compatibility**

Interference immunity	According to EN 50082-2
Emitted interference	According to EN 50081-1
Error caused by EMC influences	< 1 %

**Explosion protection**

Degree of protection	
Intrinsically safe	ATEX II 1G EEx ia II C T4
EC-Certificate of Conformity	DEMKO 01 ATEX 129483 X
non incendive	ATEX II 3G EEx nA II C T4
EC-Certificate of Conformity	DEMKO 01 ATEX 129482 X
Certificate of Conformity	Applied

**Housing**

Material	Plastic, cast
Weight	50 g (0.11 lb)
Cross-section of connecting leads	max. 2.5 mm <sup>2</sup> (0.003875 in <sup>2</sup> )

## 1.5 Ordering data

Description	Order number
<b>SITRANS TK-L temperature transmitter</b> for installation in the terminal housing Type B (DIN 43729), two-wire connection 4 to 20 mA, programmable, without electrical isolation Not explosion proof With intrinsically safe type of explosion protection "i" for zone 1 and "non incensive" for zone 2	7NG3120-0JN00 7NG3122-0JN00
<b>Operating instructions SITRANS TK-L</b> language: German/English	A5E00095604
<b>SIPROM TK parameterisation software for SITRANS TK and TK-L;</b> language: German/English/French <b>Modem for SITRANS TK and TK-L</b>	7NG3190-8KB 7NG3190-6KB

## 1.6 Dimensions

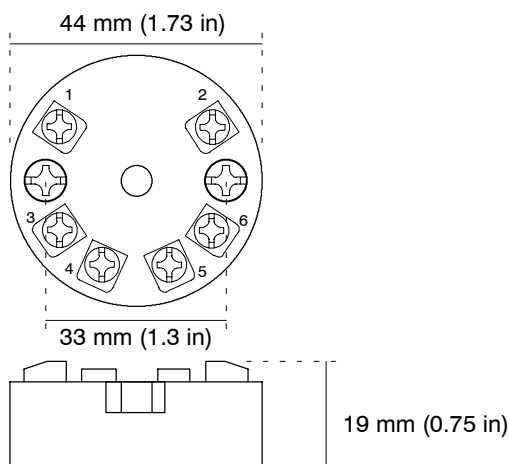


Figure 2 Dimensions

## 2 Installation

### 2.1 Installation in the terminal housing

The SITRANS TK-L transmitter must be installed in the housing. The housing's type of protection and material must be adapted to the respective requirements. The environmental conditions specified in the technical data (Chapter 1.4) must be observed.

Springs and screws for securing the transmitter are included in the delivery. The SITRANS TK-L can be secured both in the base of the terminal housing and also in its raised cover.

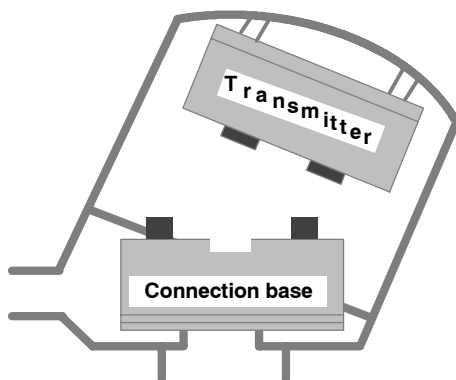


Figure 3 Securing the SITRANS TK-L transmitter in the cover of the terminal housing

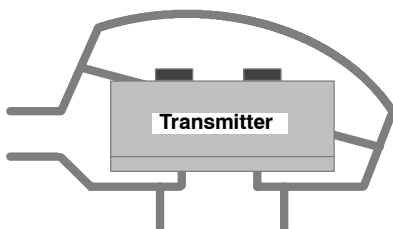


Figure 4 Securing the SITRANS TK-L transmitter in the base of the terminal housing



---

**WARNING**

When the unit is installed in a hazardous area (zone 2), the housing must at least feature degree of protection IP 54 according to IEC 529.

---

## 2.2 Electrical connection

---

**WARNING**

The applicable national regulations must be observed during electrical installation, in explosion hazard areas particularly

- the regulations governing electrical installations in explosion hazard rooms (Ex V),
- the regulations for the erection of electrical installations in explosion hazard areas (VDE 0165) and
- the conformity certification.

Check whether the available auxiliary power agrees with the value stated on the rating plate.

---

- For details of how to connect the sensor, see Figure 6, page 28 "Sensor pin assignments".
- Auxiliary power  
Connect the wires of the auxiliary power supply to the "+" and "-" terminals, paying attention to the polarity (the unit is protected against polarity reversal).
- Connecting cable  
Max. cable cross-section 2.5 mm<sup>2</sup> (0.003875 in<sup>2</sup>).  
Lay signal cables separately from cables carrying voltages > 60 V.  
Use cables with twisted wires.  
Avoid the proximity of large electrical installations or use shielded cables.

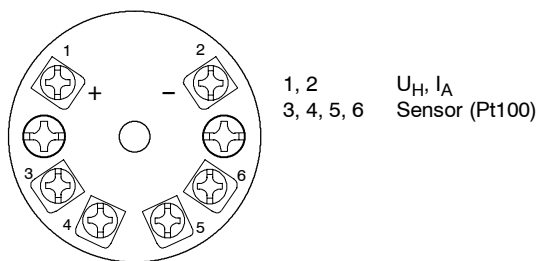
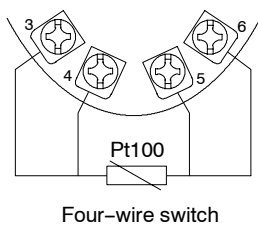
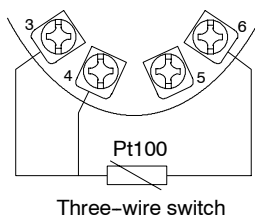
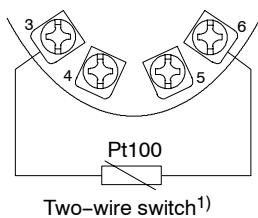


Figure 5 Terminal assignments

### Resistance thermometers Pt100



<sup>1)</sup> Line resistance for compensation is programmable.

Figure 6 Sensor pin assignments

## 3 Commissioning

The transmitter's parameters must be chosen to suit the requirements of the task in hand. Make sure that the parameters and the data on the rating plate correspond.

Close the cover of the terminal housing after connecting the sensor and the auxiliary power supply. When the auxiliary power is activated, the transmitter assumes operation after a start up time of around 10 seconds.

### 3.1 Functions

When using SITRANS TK-L, the following functions can be executed via the SIPROM TK parameterisation software:

- Set the upper/lower output current limit
- Store the measuring point identification data
- Set the type of input connection (two-, three- or four-wire connection)
- Set the measuring range, the unit and the attenuation
- Set the output current in the event of a fault
- Open-circuit monitoring

### 3.2 Output current in the event of a fault

The sensor lines and the electronic circuitry of the transmitter are constantly monitored. In the event of a fault, the output current is set to 3.5 or 23.0 mA. The respective value can be set.

### 3.3 Open-circuit monitoring

Open-circuit monitoring takes place during resistance thermometer measurement in two-, three- and four-wire connection.

### 3.4 Line compensation

Line compensation is necessary for a two-wire resistance thermometer measurement.

Line compensation is set by numerically specifying the measured line resistance (sum of the forward and return conductors).

## 4 Operation with a PC/Laptop

When using the SIPROM TK parameterisation software and the modem for SITRANS TK, the transmitter can be operated with a PC. To do this, simply connect the transmitter to the PC via the modem. In doing so, the power needed for the transmitter is supplied through the PC's serial interface. For further details, please refer to the SIPROM TK instruction manual and, for details of the modem, refer to the instruction manual "Modem for SITRANS TK".



## **5 Maintenance**

The transmitter requires no maintenance.

## 6 Certificates

### 6.1 EC Declaration of conformity

# SIEMENS

## EG-Konformitätserklärung EC Declaration of Conformity

No. 2201- 03/01

Hersteller: Siemens AG .....

Manufacturer: .....

Anschrift: Östliche Rheinbrückenstr. 50; 76187 Karlsruhe .....

Address: Bundesrepublik Deutschland .....

Produkt- SITRANS TK-L .....

bezeichnung: 7NG312&-0JN00 &=0 (nicht – Ex),2 (EX) .....

Product .....

description .....

**Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender Europäischer Richtlinien überein:**

*The product described above in the form as delivered is in conformity with the provisions of the following European Directives:*

89/336/EWG Richtlinie des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit (geändert durch 91/263/EWG, 92/31/EWG, 93/68/EWG und 93/97/EWG).

*Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility (amended by 91/263/EEC, 92/31/EEC, 93/68/EEC and 93/97/EEC)*

CE-Kennzeichnung / CE marking: 03/2001

Die Konformität mit den Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen:  
Conformity to the Directives is assured through the application of the following standards:

Referenznummer Reference number	Ausgabedatum Edition	Referenznummer Reference number	Ausgabedatum Edition
EN 61326 .....	Mai '99 .....	.....	.....
.....	.....	.....	.....

Karlsruhe ....., den / the 19.03.2001 .....

Siemens AG

Dr. Zips, Entwicklung.....  
Name, Funktion  
Name, function

Unterschrift  
signature

Dr. Schmidt, Fertigung.....  
Name, Funktion  
Name, function

Unterschrift  
signature

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Zusicherung von Eigenschaften.  
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.  
*This declaration certifies the conformity to the specified directives but contains no assurance of properties. The safety documentation accompanying the product shall be considered in detail.*

**SIEMENS**

## EG-Konformitätserklärung EC Declaration of Conformity

No. 2201-03/01-X

Hersteller: Siemens AG.....  
 Manufacturer: .....  
 Anschrift: Östliche Rheinbrückenstr. 50; 76187 Karlsruhe.....  
 Address: Bundesrepublik Deutschland.....  
 Produkt- SITRANS TK-L, Type 7NG3122-0JN00.....  
 bezeichnung: .....  
 Product .....  
 description .....

**Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender Europäischer Richtlinien überein:**

*The product described above in the form as delivered is in conformity with the provisions of the following European Directives:*

94/9/EG Richtlinie des Europäischen Parlaments und des Rates vom 23. März 1994 zur Angleichung  
 der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur  
 bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen.  
*Directive of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member  
 States concerning equipment and protective systems intended for use in potentially explosive atmospheres*

**Die Konformität mit den Richtlinien wird nachgewiesen durch die Einhaltung folgender harmonisierter Normen:** *Conformity to the Directives is assured through the application of the following european standards:*

Referenznummer Reference number	Ausgabedatum Edition	Referenznummer Reference number	Ausgabedatum Edition
EN 50014.....	1997.....	EN 50021.....	1999.....
EN 50020.....	1994.....		

EG Baumusterprüfbescheinigung Nr.: EC-Type-Examination Certificate no.: DEMKO 01 ATEX 129483X	Prüfbericht Nr.: Report no.: 129483.....	EG Baumusterprüfbescheinigung Nr.: Reference number .....	Prüfbericht Nr.: Edition .....
DEMKO 01 ATEX 129482X	129482.....	.....	.....

**CE-Kennzeichnung / CE marking:** 2001-03-16

Karlsruhe, den / the 2001-03-27

Siemens AG



Dr. Schmidt, .....  
 Name, Funktion .....  
 Name, function .....  
 Unterschrift .....  
 signature .....

Dr. Zips, Entwicklung .....  
 Name, Funktion .....  
 Name, function .....  
 Unterschrift .....  
 signature .....

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Zusicherung von Eigenschaften.  
 Die Sicherheitsanweisungen der mitgelieferten Produktdokumentation sind zu beachten.  
*This declaration certifies the conformity to the specified directives but contains no assurance of properties. The safety documentation accompanying the product shall be considered in detail.*

## 6.2 EC Type Examination Certificates

# DEMKO

[1]	<b>TYPE EXAMINATION CERTIFICATE</b>	
[2]	<b>Equipment or Protective System Intended for use in Potentially explosive atmospheres Directive 94/9/EC</b>	
[3]	Type Examination Certificate Number: <b>DEMKO 01 ATEX 129482X</b>	
[4]	Equipment: <b>SITRANS TK-L, Type 7NG3122-0JN00</b>	
[5]	Manufacturer: <b>Siemens AG</b>	
[6]	Address: <b>D-76181 Karlsruhe, Germany.</b>	
[7]	This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.	
[8]	UL International Demko A/S certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to the European Union Directive 94/9/EC of 23 March 1994.	
	The examination and test results are recorded in confidential report number 129482	
[9]	Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to Standards: <b>EN 50021:1999</b>	
[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 TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this requirement or protective system.	
[12]	The marking of the equipment or protective system shall include the following:	
	<b>Ⓔ II 3 G EEx nA II T4</b>	
	On behalf of UL International Demko A/S	Herlev, 2001-03-19
	 Steen Lumby Certification Manager	
This certificate and its schedules may only be reproduced in its entirety and without any change.		
Notified body: UL International Demko A/S Testing & Certification, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark, Phone +45 44 85 65 65, Fax +45 44 85 65 00, E-mail: demko@demko.dk		
Ref.: 01 ATEX 129482X		Page 1

A subsidiary of



Underwriters Laboratories Inc. ®

**SCHEDULE****TYPE EXAMINATION CERTIFICATE No.****DEMKO 01 ATEX 129482X****[13] DESCRIPTION OF EQUIPMENT:**

The product contains a circuit board, built into a round plastic cabinet for mounting in a DIN-Housing form B. The module contains analogue circuits and a low power CPU circuit.

The module has the following connections:

- Current loop input, 4...20 mA (two terminals)
- Sensor connections (Four terminals)

**[14] DESRIPTIVE DOCUMENTS****[14.1] Drawings**

<b>Number</b>	<b>Description</b>
55 11-414	ATEX Schedule drawings

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

**[14.2] Report No.:**

129482 Report 129482-01

**[15] SPECIAL CONDITIONS FOR SAFE USE****[15.1] Electrical specifications for the connection facilities.****Rated maximum voltage: 35 Vdc****T4: -40°C < T<sub>amb</sub> < +85°C**

For safe installation, please refer to manufactures installation manual.

This certificate may only be reproduced in its entirety and without any change, schedule included.

Notified body: UL International Demko A/S Testing & Certification, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark,

Phone +45 44 85 65 65, Fax +45 44 85 65 00, E-mail: demko@demko.dk

Ref.: 01 ATEX 129482

129482X Report 129482-01

Page 2 of 3

**DEMKO**



[16] **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Concerning EHSR that are not addressed by the standards listed in this certificate have been identified and individually assessed in Report No. 129482-01.

[17] **CONDITIONS OF CERTIFICATION**

- [17.1] A "PRODUCTION QUALITY ASSURANCE NOTIFICATION" has been issued according to ANNEX IV in DIRECTIVE 94/9/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL. This was done in connection with a previously intrinsic safe (II 1 G) certification of a similar product. Therefore, the UL International Demko A/S notified Body number 0539 appear on the marking plate.

On behalf of UL International Demko A/S

Herlev, 2001-03-19

  
Steen Lumby  
Certification Manager

This certificate may only be reproduced in its entirety and without any change, schedule included.

Notified body: UL International Demko A/S Testing & Certification, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark,  
Phone +45 44 85 65 65, Fax +45 44 85 65 00, E-mail: demko@demko.dk  
Ref.: 01 ATEX 129482 129482X Report 129482-01

Page 3 of 3

**DEMKO**



**DEMKO****[1] EC-TYPE EXAMINATION CERTIFICATE**

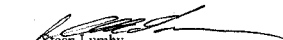
**[2] Equipment or Protective System Intended for use  
in Potentially explosive atmospheres  
Directive 94/9/EC**

- [3] EC-Type Examination Certificate Number: **DEMKO 01 ATEX 129483X**
- [4] Equipment or Protective System: **SITRANS TK-L, Type 7NG3122-0JN00**
- [5] Manufacturer: **Siemens AG**
- [6] Address: **D-76181 Karlsruhe, Germany**
- [7] This equipment or protective system and any acceptable variation there to is specified in the schedule to this certificate and the documents therein referred to.
- [8] UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to 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 confidential report no. 129483
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: **EN 50014:1997** **EN 50070:1994**
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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 or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this requirement or protective system.
- [12] The marking of the equipment or protective system shall include the following:

**II 1G EEx to IIC T4**

On behalf of UL International Demko A/S

Herlev, 2001-03-19

  
Steen Lumby  
Certification Manager

This certificate may only be reproduced in its entirety and without any change, schedule included.

Notified body: UL International Demko A/S, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark,  
Phone +45 44 85 65 65, Fax +45 44 85 65 00

Ref.: 01 ATEX 129483

Page 1

A subsidiary of



**Underwriters Laboratories Inc. ®**

[13] **Schedule**[14] **EC-TYPE EXAMINATION CERTIFICATE No.****DEMKO 01 ATEX 129483X**[15] Description of Equipment or protective system:

The product contains a circuit board, built into a round plastic cabinet for mounting in a DIN-Housing form B. The module contains analogue circuits and a low power CPU circuit.

The module has the following connections:

- Current loop input, 4...20 mA (two terminals)
- Sensor connections (Four terminals)

[16] Report No.:

129483 Report 129483-01

Drawings:

Number	Description
55 11-414	ATEX Schedule drawings

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

[17] Special conditions for safe use:

Intrinsically safe specifications

Input Data	Sensor Connections
$U_i$ : 28 Vdc	$U_o$ : 6,5 Vdc
$I_i$ : 0.1 A	$I_o$ : 77 mA
$P_i$ : 0.7 W	$P_o$ : 0.5 W
$C_i$ : 10 nF	$C_o$ : 25 $\mu$ F
$L_i$ : 10 $\mu$ H	$L_o$ : 3 mH

The equipment must be electrically connected via an approved or certified isolating interface / zener barrier placed outside the hazardous area.

$$T_4: -40^{\circ}\text{C} < T_{\text{amb}} < +85^{\circ}\text{C}$$

This certificate may only be reproduced in its entirety and without any change, schedule included.

Notified body: UL International Demko A/S, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark,

Phone +45 44 85 65 65, Fax +45 44 85 65 00

Ref.: 01 ATEX 129483X

129483 Report 129483-01

Page 2 of 3

**DEMKO**





[18] Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the Ex standards only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

On behalf of UL International Demko A/S

Herlev, 2001-03-19

  
Steen Lumby  
Certification Manager

This certificate may only be reproduced in its entirety and without any change, schedule included.

Notified body: UL International Demko A/S, P. O. Box 514, Lyskaer 8, DK-2730 Herlev, Denmark,  
Phone +45 44 85 65 65, Fax +45 44 85 65 00  
129483 Report 129483-01

Ref.: 01 ATEX 129483X

Page 3 of 3

**DEMKO**

