

Number **TC7973** revision 0  
Project number 219474  
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Issued by NMI Certin B.V.  
Hugo de Grootplein 1  
3314 EG Dordrecht  
The Netherlands

In accordance with Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993 and by application of the OIML International Recommendation R 60 (Edition 2000).

Manufacturer Siemens AG  
IIA SC PI 5  
Östliche Rheinbrückenstrasse 50  
D-76187 Karlsruhe  
Germany

In respect of A **compression load cell, ring type**, with strain gauges, tested as a part of a weighing instrument.  
Manufacturer : Siemens  
Type : RN-S SA

Characteristics  $E_{max}$  : 60 kg up to and including 60 t  
Accuracy class : C

In the description number TC7973 revision 0 further characteristics are described.

Description and documentation The load cell is described in the description number TC7973 revision 0 and documented in the documentation folder TC7973-1, appertaining to this test certificate.

Remarks Summary of the test involved: see Appendix number TC7973 revision 0.

Issuing Authority

**NMI Certin B.V. Notified Body number 0122**  
19 September 2011

  
C. Oosterman  
Head Certification Board

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## 1 General information about the load cell

All properties of the load cell, whether mentioned or not, may not be in conflict with the standard mentioned in the test certificate.

### 1.1 Essential parts

Description	Drawing number	Rev.	Remarks
Datasheet Siwarex WL280 RN-S-SA Load cell	7973/1-01	-	2 pages

Cable:

- The load cell is provided with a 4-wire system:
  - The cable length is related to the capacity of the load cell, see chapter "Specification" in the Datasheet Siwarex WL280 RN-S-SA Load cell;
  - The cable length shall not be modified;
- The cable should be a shielded cable, the shield may be connected to the load cell.

### 1.2 Essential characteristics

Type	RN-S SA			
Humidity classification	CH			
Fraction $p_{lc}$	0,7			
Temperature range	-10 °C / +40 °C			
Maximum capacity	$E_{max}$	60, 130, 250 and 280 kg	500 kg up to and including 10 t	13 t up to and including 60 t
Accuracy class	C			
Maximum number of load cell verification intervals	$n_{max}$	5000		
Ratio of minimum LC verification interval	$Y = E_{max} / v_{min}$	16000	17500	25000
Ratio of minimum dead load output return	$Z = E_{max} / 2 * DR$	5000		

The characteristics for  $n_{max}$  and  $Y$  can be reduced separately.  $Z$  is proportional or equal to  $n_{max}$

Each produced load cell is supplied with information about its characteristics.



# Description

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Minimum dead load	: 0 kg
Safe overload	: 150 % of $E_{max}$
Rated Output	: 1,0 mV/V $\pm$ 0,1 mV/V for 60, 130 and 280 kg 1,75 mV/V $\pm$ 0,1 mV/V for 250 kg 2,0 mV/V $\pm$ 0,1 mV/V for 500 kg up to and incl. 60 t
Input impedance	: 1260 $\Omega \pm$ 100 $\Omega$ for 60, 130 and 280 kg 1100 $\Omega \pm$ 100 $\Omega$ for 250 kg up to and incl. 10 t 1200 $\Omega \pm$ 100 $\Omega$ for 13 t 1075 $\Omega \pm$ 100 $\Omega$ for 28 t 1350 $\Omega \pm$ 200 $\Omega$ for 60 t
Output impedance	: 1020 $\Omega \pm$ 0,5 $\Omega$ for 60, 130 and 280 kg 1025 $\Omega \pm$ 25 $\Omega$ for 250 kg up to and incl. 10 t 1000 $\Omega \pm$ 0,5 $\Omega$ for 13 t 930 $\Omega \pm$ 0,5 $\Omega$ for 28 t 1175 $\Omega \pm$ 0,5 $\Omega$ for 60 t
Recommended excitation	: 5 – 12 V DC/AC
Excitation maximum	: 18 V DC/AC
Transducer material	: Stainless steel
Atmospheric protection	: Hermetically welded

## 1.3 Essential shapes

The load cell is built according to drawing:

- "Datasheet Siwarex WL280 RN-S-SA Load cell", drawing number 7973/1-01.

The data plate is secured against removal by sealing or will be destroyed when removed. The data plate mentions at least the information and markings as described in the OIML R60 document. In the countries where it is mandatory the load cell should bear this test certificate number: TC7973.

Securing:

The connecting cable of the load cell or the junction box is provided with possibility to seal.



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Tests performed for this test certificate:

Test	Institute	type, version, remarks
Temperature test and repeatability (20, 40, -10 and 20 °C)	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 280kg C5 RN-S SA 2t C5 RN-S SA 13t C5
Temperature effect on minimum dead load output (20, 40, -10 and 20 °C)	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 280kg C5 RN-S SA 2t C5 RN-S SA 13t C5
Creep (20, 40 and -10 °C)	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 280kg C5 RN-S SA 2t C5 RN-S SA 13t C5
Minimum dead load output return (20, 40 and -10 °C)	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 280kg C5 RN-S SA 2t C5 RN-S SA 13t C5
Barometric pressure effects at room temperature	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 13t C5
Damp heat, cyclic: marked CH (or not marked)	NMi Certin B.V.	RN-S SA 60kg C5 RN-S SA 13t C5