

Member State of OIML  
Germany



OIML Certificate N°  
R60/2000-DE1-09.16

## OIML CERTIFICATE OF CONFORMITY

### Issuing Authority

Name: Physikalisch-Technische Bundesanstalt  
Address: Bundesallee 100, 38116 Braunschweig  
Person responsible: Dr. Panagiotis Zervos

### Applicant

Name: Keli Electric Manufacturing (Ningbo) Co. Ltd.  
Address: NO. 199 Changxing Road  
315033 Ningbo, Jiangbei District  
  
China

Manufacturer of the certified type is the applicant.

### Identification of the certified type

Strain gauge shear beam load cell  
Type: SQB-SS  
Further characteristics see page 2

This Certificate attests the conformity of the above identified type (represented by the sample or samples identified in the associated Test Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

**R60**, edition 2000  
for accuracy class C3

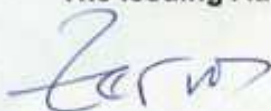
This Certificate relates only to the metrological and technical characteristics of the type of instrument covered by the relevant OIML Recommendation identified above.

This Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated Test Report

No. 1.12-4041414-1 that includes 22 pages

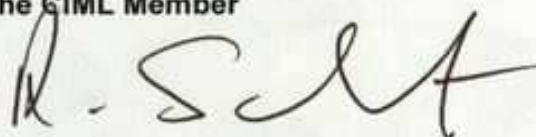
**The Issuing Authority**



Dr. P. Zervos  
Direktor und Professor

15.06.2009

**The OIML Member**



Dr. R. Schwartz  
Direktor und Professor

15.06.2009

The load cells (LC) of the series SQB-SS are shear beam load cells made of stainless steel. The strain gauge application is encapsulated hermetically.

The metrological characteristics for application in approved weighing instruments are listed in table 1.

Table 1: Essential data

Accuracy class			C3
Maximum number of load cell intervals	$n_{LC}$		3000
Rated output		mV/V	3
Maximum capacity	$E_{max}$	t	1 / 1.5 / 2 / 2.5 / 3 / 5
Minimum load cell verification interval	$\frac{V_{min}}{(E_{max} / Y)}$		$E_{max} / 10000$
Minimum dead load output return	$\frac{DR}{(1/2 E_{max} / Z)}$		$\frac{1}{2} E_{max} / 6000$

Dead load: 0%· $E_{max}$ ; Safe overload: 150%· $E_{max}$ ; Input impedance: 400  $\Omega$ ; Fraction:  $p_{LC} = 0.7$

**Important note:** Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated Test Report is not permitted, although either may be reproduced in full.





# OIML Certificate of Conformity

**OIML Member State**  
The Netherlands

Number R60/2000-NL1-14.28  
Project number 14200592  
Page 1 of 2

Issuing authority NMI Certin B.V.  
Person responsible: C. Oosterman

Applicant and Manufacturer Keli Sensing Technology (Ningbo) Co., Ltd.  
No. 199 Changxing Road,  
Jiangbei District, Ningbo  
China

Identification of the certified type A **shear beam load cell**, with strain gauges.  
Type : SQB-SS 250kg-1t

Characteristics See next page

This Certificate attests the conformity of the above identified Type (represented by the sample(s) identified in the OIML Test Report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

**OIML R60** - Edition 2000 (E) for accuracy class C

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation above-identified. This Certificate does not bestow any form of legal international approval.

*Important note:* Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate was issued, partial quotation of the Certificate and of the associated OIML Test Report(s) is not permitted, although either may be reproduced in full.

Issuing Authority **NMI Certin B.V., OIML Issuing Authority NL1**  
22 December 2014

  
C. Oosterman  
Head Certification Board

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This document is issued under the provision that no liability is accepted and that the applicant shall indemnify third-party liability.

The notification of NMI Certin B.V. as Issuing Authority can be verified at [www.oiml.org](http://www.oiml.org)

Parties concerned can lodge objection against this decision, within six weeks after the date of submission, to the general manager of NMI (see [www.nmi.nl](http://www.nmi.nl)).



**OIML Member State**  
The Netherlands

Number R60/2000-NL1-14.28  
Project number 14200592  
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The conformity was established by the results of tests and examinations provided in the associated OIML Test Report(s):

- No. NMI-14200592-02 dated 19 December 2014 that includes 51 pages.

**Characteristics of the load cell:**

Maximum capacity ( $E_{max}$ )	250 kg up to and including 1000 kg
Minimum dead load	0 kg
Accuracy Class	C
Rated Output	$2,00 \pm 0,002$ mV/V
Maximum number of load cell intervals (n)	3000
Ratio of minimum LC Verification interval $Y = E_{max} / v_{min}$	10000
Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$	3000
Input impedance	$400 \Omega \pm 20 \Omega$
Temperature range	-10 °C / +40 °C
Fraction $p_{LC}$	0,7
Humidity Class	CH
Safe overload	150% of $E_{max}$
Output impedance	$352 \Omega \pm 3 \Omega$
Recommended excitation	10 - 12 V AC/DC
Excitation maximum	15 V AC/DC
Transducer material	Stainless steel
Atmospheric protection	Hermetically welded

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

Each produced load cell is provided with an accompanying document with information about its characteristics.

The above identified Type (represented by the sample(s) identified in the OIML Test Report) have been found to comply with the additional national requirements established by the United States of America (NIST Handbook 44 and NCWM Publication 14), included in the MAA Declaration of Mutual Confidence:

- R 60 DoMC-01 rev.0, Additional requirements from the United States;
- R 60 DoMC-02 rev.0, Additional requirements from the United States.