

(1) **TYPE EXAMINATION CERTIFICATE**

- (2) Equipment intended for use in potentially explosive atmospheres – Directive 94/9/EC
- (3) Type Examination Certificate Number: **KEMA 05ATEX1001 X**
- (4) Equipment: **Load Cell Model SHBxR, BSP, CSP-M, CP-M, HPS, SSB, HCB, 9102, RLC, 5103 and 9103**
- (5) Manufacturer: **Vishay Revere Transducers Europe B.V.**
- (6) Address: **Ramshoorn 7, 4824 AG Breda, The Netherlands**
- (7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) KEMA Quality B.V. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment 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. 2077411.

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

EN 60079-15 : 2003

EN 50281-1-1 : 1998 + A1

- (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, examination and tests of the specified equipment and not to the manufacturing process and supply of the equipment.
- (12) The marking of the equipment shall include the following:



**II 3 G EEx nA II T4 / T6 or EEx nL IIC T4 / T6
II 3 D T 70 °C**

Arnhem, 12 January 2006
KEMA Quality B.V.



C.G. van Es
Certification Manager

° This Certificate may only be reproduced in its entirety and without any change

SCHEDULE

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(15) **Description**

The Load Cells Model SHBxR-...-...-..., Model BSP-...-...-..., Model CSP-M-...-...-..., Model CP-M-...-...-..., Model HPS-...-...-..., Model, SSB-...-...-..., Model HCB-...-...-..., Model 9102-...-...-..., Model RLC-...-..., Model 5103-...-... and Model 9103-...-... are used to convert a mechanical force or load into an electrical signal. The Load Cells are of a hermetically sealed or sealed construction and are provided with a permanently connected cable with a maximum length of 25 m.

The enclosure of the Load Cell provides, depending on the Model, a degree of protection of IP 66, IP 67 or IP 68 in accordance with EN 60529.

Ambient temperature range -20 °C ... +40 °C.

The maximum surface temperature of the enclosure $T = 70\text{ °C}$ is referred to a maximum ambient temperature of 40 °C.

Electrical data

Model HCB, Model 9102, Model SHBxR, Model BSP, Model CSP-M, Model CP-M, Model HPS, Model SSB, Model RLC, Model 5103 and Model 9103

Excitation circuit in type of protection energy limitation EEx nL IIC.
(green and black wires)

Signal output circuit in type of protection energy limitation EEx nL IIC.
(white and red wires)

Sense output circuit (optional) in type of protection energy limitation EEx nL IIC.
(yellow and blue wires)

The excitation circuit, the signal output circuit and the optional sense output circuit are galvanically connected and may only be connected to circuits in type of protection energy limitation EEx nL IIC.

Voltage, current and power addition of the circuits must be taken into account.

The circuits of Model CSP-M and Model CP-M shall be considered to be connected to earth.

The total maximum values for the above mentioned circuits, with exception of the circuits of Model RLC, for loads of 60 kg, 130 kg, 28 t and 60 t, are:

U_i	=	25	V	
I_i	=	1	A	
P_i	=	1,3	W	for temperature class T6
		2,75	W	for temperature class T4
C_i	=	0,4	nF	
L_i	=	0	μ H	

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Electrical data (continued)

For Model RLC, for loads of 60 kg, 130 kg, 28 t and 60 t, the maximum values for the above mentioned circuits are:

U_i	=	30	V	
I_i	=	1	A	
P_i	=	1,3	W	for temperature class T6
		2,75	W	for temperature class T4
C_i	=	2,5	nF	
L_i	=	0	μ H	

For longer cables than specified in the description, the capacitance and inductance of the additional cable must be taken into account.

For use in type of protection non-sparking EEx nA II or if intended to be used in a potentially explosive atmosphere caused by combustible dust, the Load Cell may be used without connection to energy limited circuits.

The electrical data are:

Maximum excitation voltage: 15 ... 30 Vdc (depending on model)
 Bridge impedance: 350 ... 1450 Ω (depending on model)

Routine tests

For all models except Model CSP-M and Model CP-M:

The completed assembly of the load cell that is intended to be used in a potentially explosive gas atmosphere shall withstand for one minute, without breakdown, the application of 500 Vac between excitation and output circuits, connected together, and the metal housing.

Alternatively a test voltage of 1,2 times 500 Vac for a duration of 100 ms could be used.

(16) **Report**

KEMA No. 2077411.

Special conditions for safe use

1. For electrical data for connection to energy-limited circuits see (15).
2. For use in type of protection non-sparking EEx nA II provision must be made externally to prevent the rated voltages being exceeded by transient disturbances of more than 40 %.
3. For use in type of protection non-sparking EEx nA II or if intended to be used in a potentially explosive atmosphere caused by combustible dust, the integral cable shall be terminated either in a safe area or in a suitable enclosure, which provides protection suitable for the area of installation.

(18) **Essential Health and Safety Requirements**

Covered by the standard listed at (9).

(19) **Test documentation**

As listed in Test Report no. 2077411.