

# TEST CERTIFICATE

**No. DK0199-R60-03.07 Revision 3**

**Issued by** DELTA Danish Electronics, Light & Acoustics  
EU - Notified Body No. 0199

**In accordance with** EN 45501 (1992), paragraph 8.1 and 3.5.4  
with fraction pLC = 0.7.  
OIML R60 (Edition 2000)

**Issued to** Vishay Revere Transducers B.V.  
Ramshoorn 7  
Postbus 6909, 4802 HX Breda  
The Netherlands

**In respect of** Single ended shear beam, strain gauge load cell

**Type** Type ACB

**Manufacturer** Vishay Revere Transducers

**Description and documentation** The load cell is described and documented - including a summary of the tests - in the annex which forms part of this test certificate

**Characteristics** See the annex for the detailed characteristics of the different maximum capacities and accuracy classes

**The annex comprises 2 pages.**

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## 1. Name and type of instrument and modules

The load cell is designated ACB.

## 2. Technical data

Listed on the front page.

## 3. Tests

The tests listed in Table 2 below have been carried out in accordance with OIML R60, edition 2000.

Report no. DANAK-196893 dated 2003-04-29 and DANAK-196976 dated 2003-05-23 issued by DELTA.

Table 2. Tests carried out on one load cell as follows:

|                    |           |           |
|--------------------|-----------|-----------|
| Type:              | ACB       | ACB       |
| Serial no.:        | 460166-03 | 430703-03 |
| Class:             | C6        | C3        |
| E <sub>max</sub> : | 1000 kg   | 500 kg    |
| nLC:               | 6000      | 3000      |

| Tests   | Ref: R 60-2000                             | Passed / Failed |
|---|--|-----------------|
| Temperature test and repeatability<br>(at 20, 40, -10 and 20 °C)        | 5.1.11 & 5.4 &<br>A.4.1.4-15 & A.4.1.2     | Passed          |
| Temperature effect on minimum load output<br>(at 20, 40, -10 and 20 °C) | 5.5.1.3 & A.4.1.4,<br>A.4.1.5-10, A.4.1.15 | Passed          |
| Creep during 30 minutes<br>(at 20, 40, -10 °C)                          | 5.3.1 & A.4.2                              | Passed          |
| Minimum dead load output return<br>(at 20, 40, -10 °C)                  | 5.3.1 & A.4.3 and 5                        | Passed          |
| Barometric pressure effects at room temp.                               | 5.5.2 & A.4.4                              | Passed          |
| Humidity test (CH)  | 5.5.3.1 & A.4.5                            | Passed          |

## Characteristics

| Type designation                             |                     | ACB                   |                       |                       |                       |                       |
|--|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Model name                                   |                     | ACB C3                | ACB C3                | ACB C4                | ACB C5                | ACB C6                |
| Maximum capacity                             | $E_{max}$           | 500kg                 | 1 t, 2 t, 5 t         |                       |                       |                       |
| Accuracy class                               |                     | C                     | C                     |                       |                       |                       |
| Maximum number of intervals                  | $n_{LC}$            | 3000                  | 3000                  | 4000                  | 5000                  | 6000                  |
| Apportionment factor                         | $p_{LC}$            | 0.7                   | 0.7                   |                       |                       |                       |
| Minimum verification interval                | $v_{min}$           | 0.0166 %<br>$E_{max}$ | 0.0166 %<br>$E_{max}$ | 0.0125 %<br>$E_{max}$ | 0.0100 %<br>$E_{max}$ | 0.0083 %<br>$E_{max}$ |
| Minimum verification interval for MR         | $v_{min}$ (MR)      | 0.0066 %<br>$E_{max}$ | 0.0066 %<br>$E_{max}$ | 0.0050 %<br>$E_{max}$ | 0.0050 %<br>$E_{max}$ | 0.0050 %<br>$E_{max}$ |
| Ratio of min LC verification interval        | Y                   | 6000                  | 6000                  | 8000                  | 10000                 | 12000                 |
| Ratio of min LC verification interval for MR | Y (MR)              | 15000                 | 15000                 | 20000                 | 20000                 | 20000                 |
| Minimum dead load output return              | DR                  | 0.0166 %<br>$E_{max}$ | 0.0166 %<br>$E_{max}$ | 0.0125 %<br>$E_{max}$ | 0.0100 %<br>$E_{max}$ | 0.0083 %<br>$E_{max}$ |
| Minimum dead load output return for MI6      | DR (MI6)            | -                     | 0.0083 % $E_{max}$    |                       |                       | -                     |
| Relative DR                                  | Z                   | 3000                  | 3000                  | 4000                  | 5000                  | 6000                  |
| Relative DR for MI6                          | Z (MI6)             | -                     | 6000                  |                       |                       | -                     |
| Rated output (sensitivity)                   | C                   | 2 mV/V                |                       |                       |                       |                       |
| Excitation voltage                           | $U_{exc}$           | 5-12 V                |                       |                       |                       |                       |
| Minimum dead load, relative                  | $E_{min} / E_{max}$ | 0 %                   |                       |                       |                       |                       |
| Safe overload limit                          | Lim                 | 150 % $E_{max}$       |                       |                       |                       |                       |
| Temperature rating                           | $T_{min} / T_{max}$ | -10 °C / +40 °C       |                       |                       |                       |                       |
| Input resistance                             | Ohm                 | 1000                  |                       |                       |                       |                       |
| Humidity condition                           |                     | CH                    |                       |                       |                       |                       |