



Australian Government
Department of Industry,
Innovation and Science

**National
Measurement
Institute**

Supplementary Certificate of Approval

NMI S531

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

HBM Model C16iC6/20t Digital Load Cell

submitted by Hottinger Baldwin Messtechnik GmbH
Im Tiefen See 45
D-64293 Darmstadt
Germany.

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 60, *Metrological Regulation for Load Cells*, dated July 2004.

This approval becomes subject to review on **1/4/22**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variant 1 approved – interim certificate issued	8/03/10
1	Pattern and variant 1 approved – certificate issued	8/04/10
2	Pattern and variant 1 updated & reviewed – certificate issued	6/12/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S531' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S531' in addition to the approval number of the instrument, and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



Mario Zamora

TECHNICAL SCHEDULE No S531

1. Description of Pattern **approved on 8/4/10**

An HBM model C16iC6/20t digital load cell of 20 000 kg maximum capacity (Figure 1 and Tables 1 & 2) and approved for use with up to 6000 verification scale intervals.

These load cells shall only be used with indicators which are NMI-approved for use with compatible HBM digital load cells, e.g. HBM model DS2116.

1.1 Method of Mounting

Mounting is to be in accordance with the manufacturer's instructions and as shown in Figure 3.

1.2 Markings

Each load cell is marked with the following:

Manufacturer's mark, or name written in full	HBM, GmbH
Model number	C16iCx/*t (#)
Maximum capacity, E_{max} kg (or t)
Serial number
Pattern approval mark	NMI S531
Relative V_{min}	Y = 20000 (only applicable to load cells listed in Table 2)

(#) In the model number, 'x' represents the maximum number of verification intervals in $n_{LC}/1000$, and '*' represents the maximum capacity in tonnes.

1.3 Table of Specifications

Specifications for the pattern are given below and in Tables 1 and 2.

2. Description of Variant 1 **approved on 8/4/10**

Certain other models of the C16i series with characteristics and specifications as listed below and in Tables 1 and 2. For all HBM C16i load cells:

Output rating (resolution)	1 000 000 counts at E_{max}
Supply voltage (DC)	8.5 – 15 V
Cable length (± 0.1 m)	up to 500 m (##)
Communication	RS485 / 4-wire
Junction box (recommended)	HBM model VKK2-6 (**)
Apportionment factor, PLC	0.8

(##) The load cells are provided with a socket into which connecting cables to the junction box/indicator are fitted. These cables may be up to 500 metres in length.

(**) The submittor should be consulted regarding the acceptability of alternative junction box arrangements.

TABLE 1

Certain HBM C16i series load cells

Model	E_{max} (kg)	Class	nLC	V_{min} (kg)	DR (kg)
C16iC3/20t	20 000	C	3000	2	1.67
C16iC3/30t	30 000	C	3000	3	2.5
C16iC3/40t	40 000	C	3000	4	3.33
C16iC3/60t	60 000	C	3000	5	5
C16iC4/20t	20 000	C	4000	2	1.67
C16iC4/30t	30 000	C	4000	3	2.5
C16iC4/40t	40 000	C	4000	4	3.33
C16iC4/60t	60 000	C	4000	5	5
C16iC6/20t	20 000	C	6000	2	1.67
C16iC6/30t	30 000	C	6000	3	2.5
C16iC6/40t	40 000	C	6000	4	3.33
C16iC6/60t	60 000	C	6000	5	5

TABLE 2

Additional HBM C16i series load cells

These models are marked "Y = 20 000" which represents a 'relative V_{min} ' value.

V_{min} may be calculated as $V_{min} = E_{max}/20000$, or alternatively the values listed below (which have been rounded) may be used.

Model	E_{max} (kg)	Class	nLC	V_{min} (kg)	DR (kg)
C16iC3/20t	20 000	C	3000	1	1.67
C16iC3/30t	30 000	C	3000	1.5	2.5
C16iC3/40t	40 000	C	3000	2	3.33
C16iC3/60t	60 000	C	3000	3	5
C16iC4/20t	20 000	C	4000	1	1.67
C16iC4/30t	30 000	C	4000	1.5	2.5
C16iC4/40t	40 000	C	4000	2	3.33
C16iC4/60t	60 000	C	4000	3	5
C16iC6/20t	20 000	C	6000	1	1.67
C16iC6/30t	30 000	C	6000	1.5	2.5
C16iC6/40t	40 000	C	6000	2	3.33
C16iC6/60t	60 000	C	6000	3	5

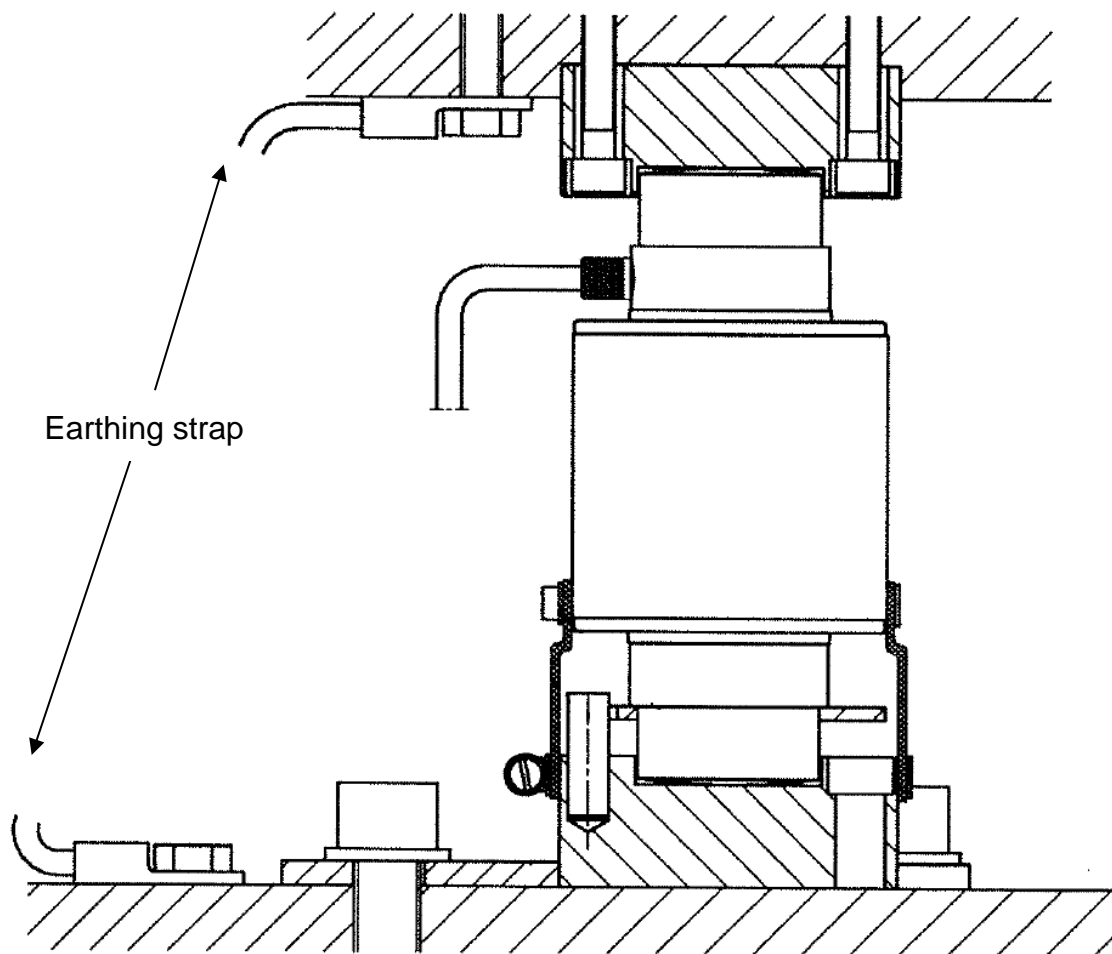
Where: E_{max} = Maximum capacity
nLC = Maximum number of verification intervals
 V_{min} = Minimum value of verification interval
DR = Minimum dead load output return

FIGURE S531 – 1



HBM Model C16iC6/20t Digital Load Cell

FIGURE S531 - 2



Typical Mounting Arrangement

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