



Member State of OIML  
Japan



OIML Certificate No.  
R60/2000-JP1-12.03

## OIML CERTIFICATE OF CONFORMITY

### Issuing authority

Name: National Metrology Institute of Japan / National Institute of  
Advanced Industrial Science and Technology (NMIJ / AIST)  
Address: AIST Tsukuba Central 3-9, Tsukuba Ibaraki 305-8563, Japan  
Person responsible: Dr. Tamotsu Nomakuchi, President of AIST

### Applicant

Name: KUBOTA Corporation  
Address: 1-2-47, Shikitsu-higashi, Naniwa-ku, Osaka, 556-8601, Japan

### Manufacturer of the certified pattern

Name: KUBOTA Corporation  
Address: 1-2-47, Shikitsu-higashi, Naniwa-ku, Osaka, 556-8601, Japan

### Identification of the certified pattern:

Beam (shear) load cell  
Type: LB-XD-1T-HCS , LB-XD-3T-HCS , LB-XD-5T-HCS  
Fraction:  $P_i=0.8$   
Temperature range:  $-10\text{ }^{\circ}\text{C} / 40\text{ }^{\circ}\text{C}$



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OIML Certificate No.  
R60/2000-JP1-12.03

Characteristics:

Model designation			LB-XD-1T-HCS	LB-XD-3T-HCS	LB-XD-5T-HCS
Accuracy class	Class	-	C		
Maximum number of load cell verification intervals	$n_{max}$	-	3000		
Humidity symbol			CH		
Minimum dead load	$E_{min}$	kg	0		
Maximum capacity	$E_{max}$	kg	1000	3000	5000
Safe load limit	$E_{lim}$	kg	1.5* $E_{max}$		
Minimum verification interval	$v_{min}$	kg	$E_{max} / 8000$		
Apportionment factor	$p_{LC}$		0.8		
Ratio of minimum LC Verification interval $Y = E_{max} / v_{min}$	$Y$	-	8000		
Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$	$Z$	-	3000		
excitation voltage		V DC	6~8		
Cable detail		-	15m(maximum)		

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report(s) with the requirements of the following Recommendation of the International Organization of Legal Metrology - OIML):

R60, edition 2000 (E)  
For accuracy class C

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

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

The conformity was established by tests described in the associated test report no. 12-08/R60:2000, that includes 33 pages.



Member State of OIML  
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OIML Certificate No.  
R60/2000-JP1-12.03

The Issuing Authority  
NMIJ/AIST



Dr. T. Nomakuchi  
President of AIST  
2012-04-23

The OIML member

Dr. Y. Miki  
2012-04-23

Important note: Apart from the mention of 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.



## Evaluation Report

Load cells

### Issuing Authority

Name : National Metrology Institute of Japan /National Institute  
of Advanced Industrial Science and Technology (NMIJ/AIST)  
Address : AIST Tsukuba Central 3, Tsukuba Ibaraki 305-8563, Japan

Applicant : KUBOTA Corporation

Manufacturer : KUBOTA Corporation

Applied Type : LB-XD-1T-HCS , LB-XD-3T-HCS , LB-XD-5T-HCS

Evaluation Report Number : 24-003

This report ensures the conformity of the applied type with the requirements of the OIML R60 (edition 2000), on the basis of evaluation of the attached test report (N° 12-08/R60:2000).

### Evaluator :

Wataru Kaminaga  
Legal Metrology Division  
NMIJ/AIST

Signature :

*W. Kaminaga*

Date: 2012.4.17

### Supervisor :

Shigeki Yamaguchi  
Head of Legal Metrology Division  
NMIJ/AIST

Signature :

*Shigeki Yamaguchi*

Date: 2012.4.17

# Description

## Technical data

Model designation			LB-XD-1T-HCS	LB-XD-3T-HCS	LB-XD-5T-HCS
Accuracy class	Class	-	C		
Maximum number of load cell verification intervals	$n_{max}$	-	3000		
Humidity symbol			CH		
Minimum dead load	$E_{min}$	kg	0		
Maximum capacity	$E_{max}$	kg	1000	3000	5000
Safe load limit	$E_{lim}$	kg	1.5* $E_{max}$		
Minimum verification interval	$v_{min}$	kg	$E_{max} / 8000$		
Apportionment factor	$p_{LC}$		0.8		
Ratio of minimum LC Verification interval $Y = E_{max} / v_{min}$	Y	-	8000		
Ratio of minimum dead load output return $Z = E_{max} / (2 * DR)$	Z	-	3000		
excitation voltage		V DC	6~8		
Cable detail		-	15m(maximum)		

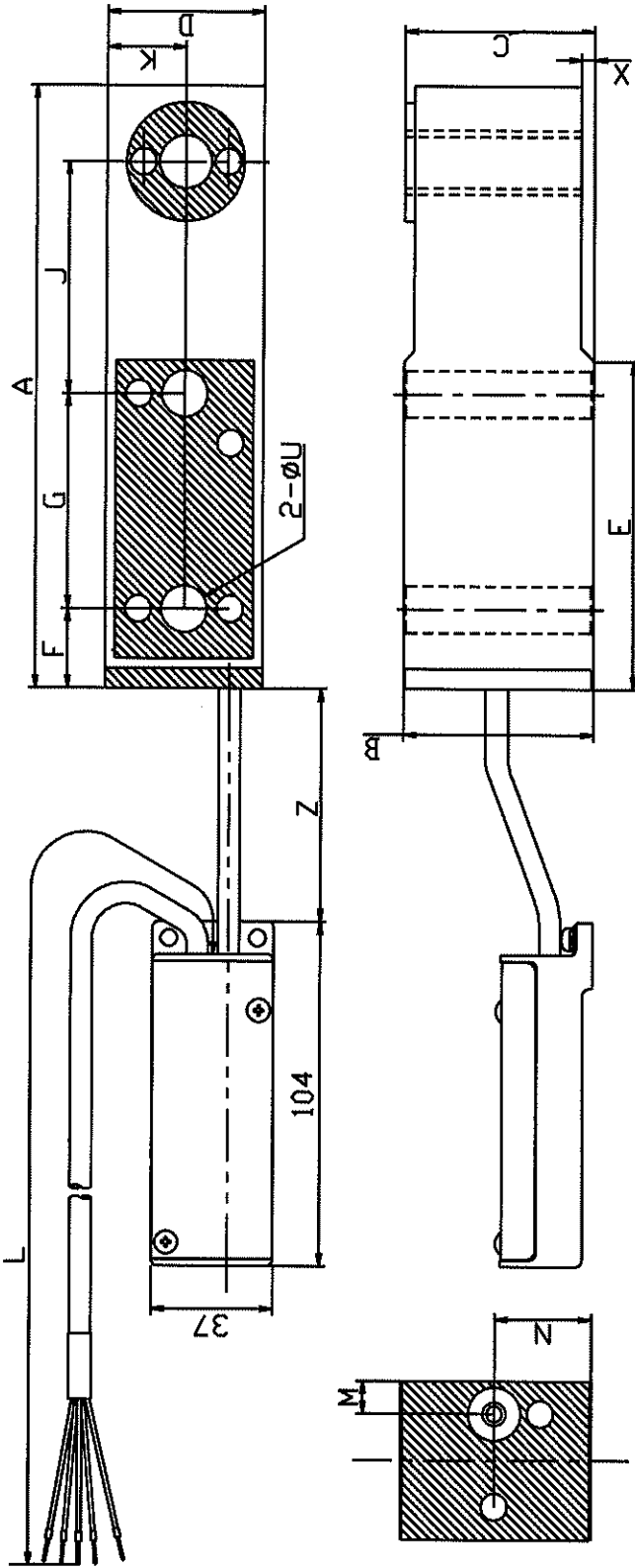


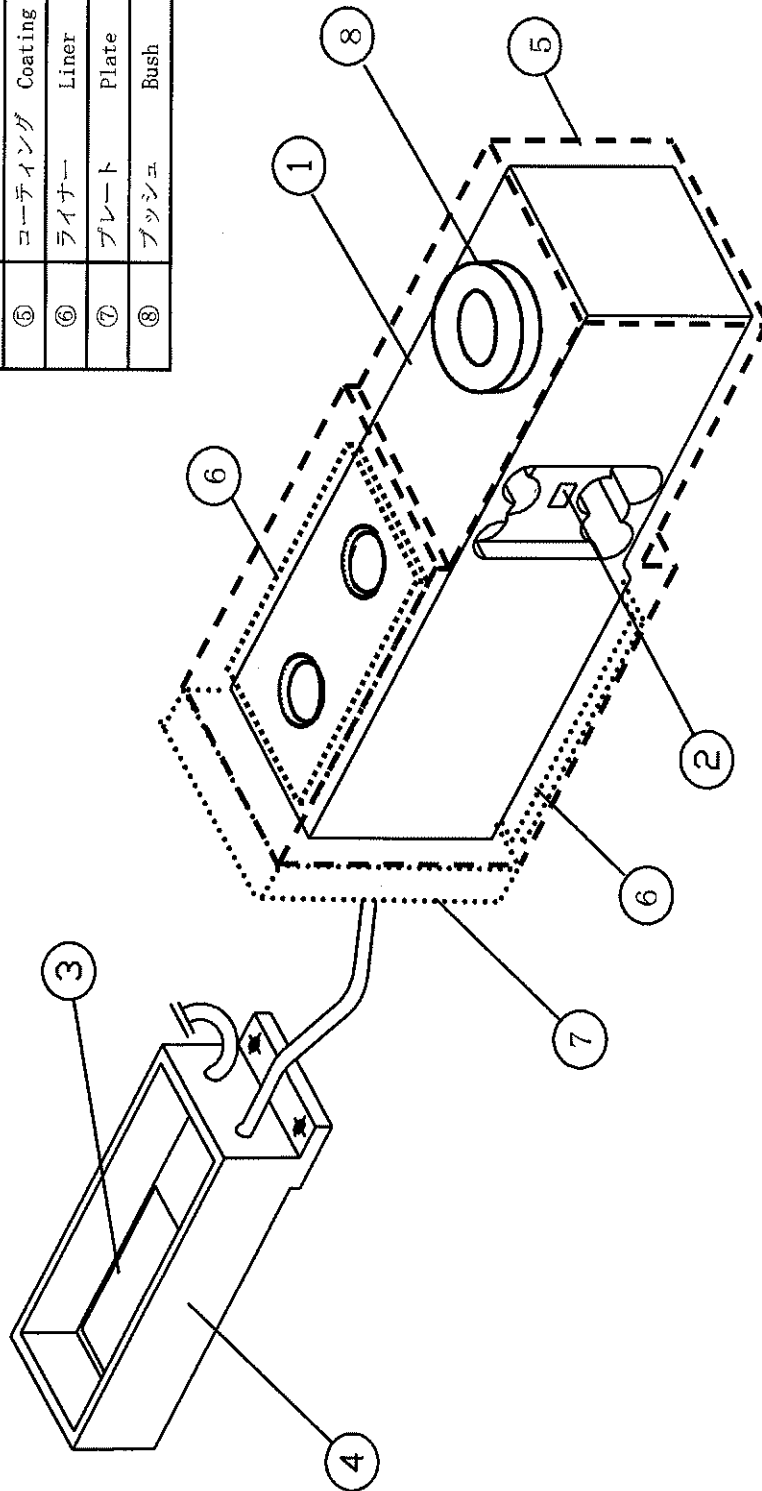
Fig.1  $E_{max} = 1T, 3T, 5T$

$E_{max}$	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	J (mm)	K (mm)	M (mm)	N (mm)	$\phi U$ (mm)	V (mm)	X (mm)	L (m)	Z (mm)	質量 (kg)
1t	165	51	51	44	80	32	30	80	22	10	24.5	14	10	約 7	max.15	85 以下	約 2.1
3t	182	68	68	54	95	24	60	75	27	10	35.5	17	10	約 14.5	max.15	85 以下	約 3.8
5t	220	78	78	60	110	30	50	115	30	10	46	22	10	約 15	max.15	85 以下	約 5.8

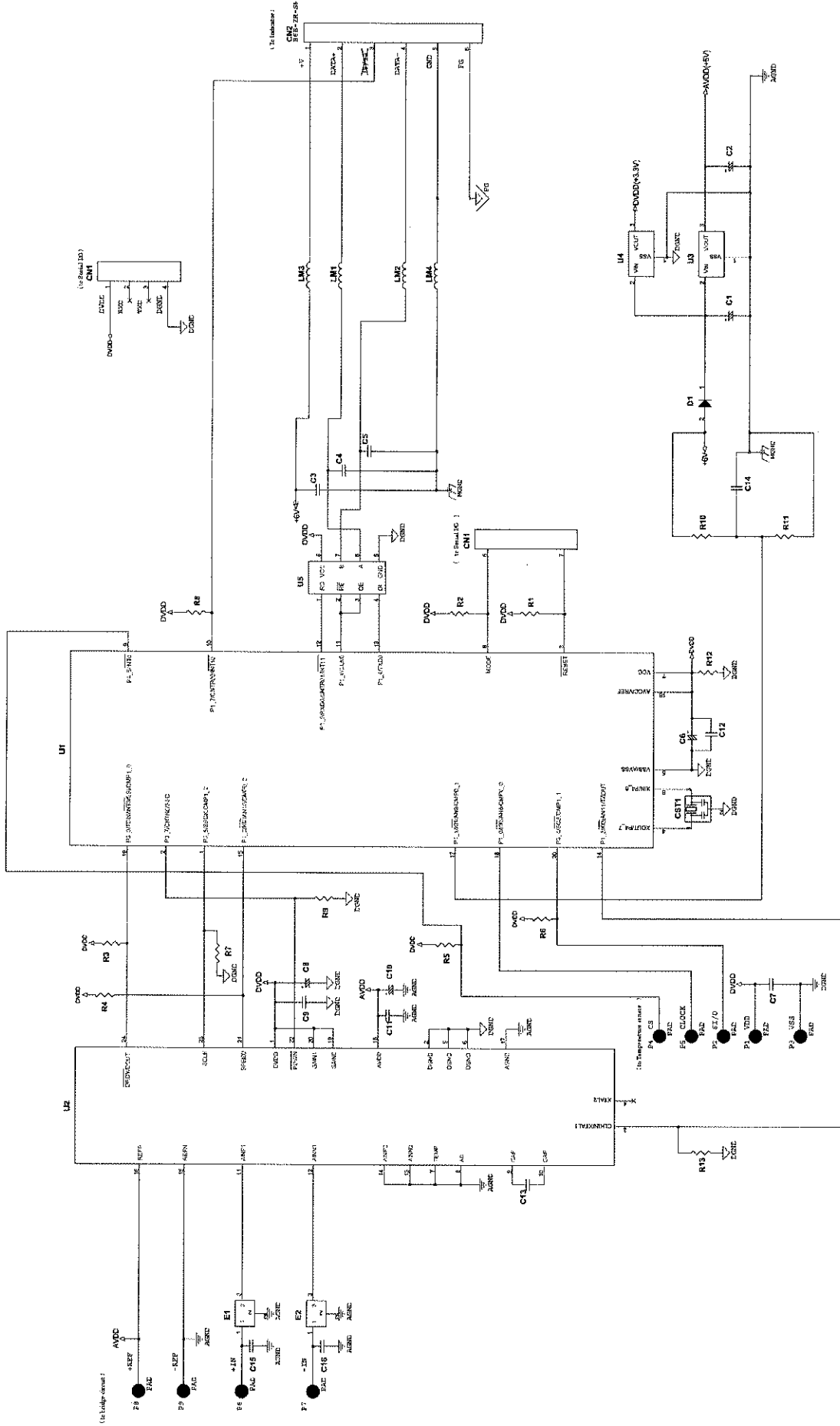
(注) 起重体材質：鉄

作成日	2011.12.26
図書名	外観図
図書番号	LB-XD-HCS-B-001

No.	部品名称	Part name
①	起歪体	Element
②	歪ゲージ	Strain gauge
③	D-LC基板	D-LC board
④	ケース	Case
⑤	コーティング	Coating
⑥	ライナー	Liner
⑦	プレート	Plate
⑧	ブッシュ	Bush

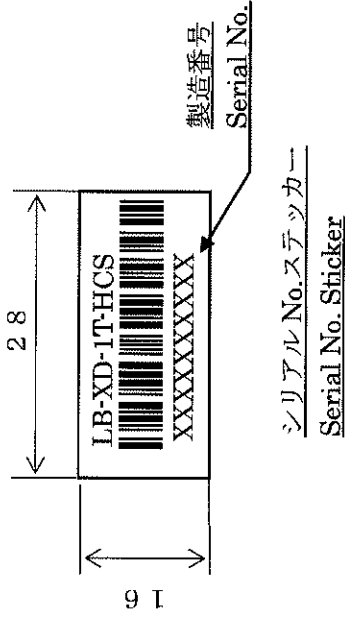
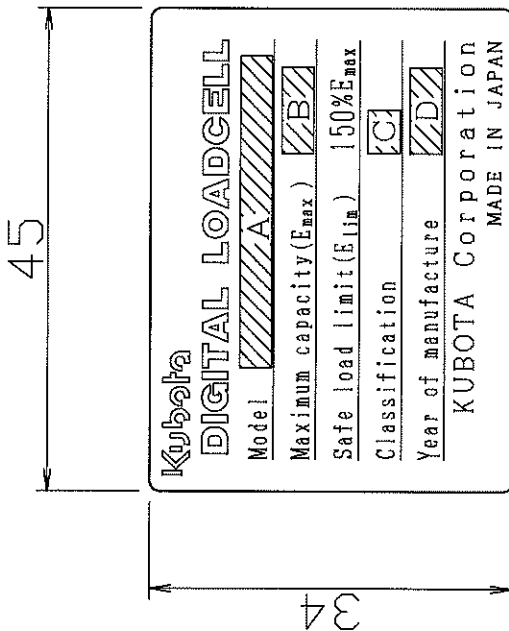


作成日	Date	2011.12.22
図書名	Document name	構造図
図書番号	Document number	LB-XD-HCS-C-001
		Structural drawing



日付	Date	2010.12.23
図書名	Document name	電気回路図 Circuit diagram
図書番号	Document number	LB-XD-G-001





定格銘板  
 Name Plate

A 型式名 Model designation	B 最大容量 Maximum capacity	C 精度等級 Accuracy class	D 製造年 Year of manufacture
LB-XD-1T-HCS	1t	C3	2011 ※ 製造年を西暦で印字 ※ Print the year of manufacture by A.D.
LB-XD-3T-HCS	3t		
LB-XD-5T-HCS	5t		

作成日 Date	2012.03.22
図書名 Document name	銘板図 Name Plate view
図書番号 Document number	LB-XD-HCS-K-001



National Metrology Institute of Japan

Metrological regulation for load cells :  
Test report

Project number : LC-OIML-12-009

Test report number : 12-08 / R60:2000

Issuing authority : National Metrology Institute of Japan /National Institute of  
Advanced Industrial Science and Technology (NMIJ/AIST)

AIST Tsukuba Central 3, Tsukuba Ibaraki 305-8563, Japan

Applicant : KUBOTA Corporation

Manufacturer : KUBOTA Corporation

Date of application : 2012.4.5

End of evaluation : 2012.4.9

Date of issue : 2012.4.12

Signature :

A handwritten signature in black ink, appearing to read 'Y. Koyano', written in a cursive style.

Yasuhiro Koyano

Chief of Legal Weighing Metrology Section  
Mechanical Metrology Division

**Testing authority**

Name: National Metrology Institute of Japan  
 Address: Central 3-1, 1-1-1 Umezono, Tsukuba, Ibaraki, 305-8563, Japan  
 Contact information: Telephone: +81 29 861 4389 Fax: +81 29 861 4341

**Applicant/Manufacturer information**

Application no.: 24-003  
 Application date: 2012.4.5  
 Model designation: LB-XD-\*\*-HCS

Manufacturer: KUBOTA Corporation  
 Address: 1-2-47 Shikitsu-higashi, Naniwa-ku, Osaka, Japan

Applicant: KUBOTA Corporation  
 Address: 1-2-47 Shikitsu-higashi, Naniwa-ku, Osaka, Japan

Representative: Koichi Segawa  
 (name, telephone) +81-72-993-7036

Instrument category: Load cell: Strain guage Documentation no.: \_\_\_\_\_

**Information concerning the pattern**

Accuracy class:  A  B  C  D

Maximum number of load cell verification intervals ( $n_{max}$ ): 3000

Direction of loading: (for load cell characterization, see 4.6.3)

Tension  Beam (shear)  Compression  
 Universal  Beam (bending)

Safe load limit (Lim): 150% of  $E_{max}$  Apportionment factor,  $p_{LC}$  (see Note) 0.8

Limits of working temperature: (only if other than  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , see 5.5.1.1)

Upper: \_\_\_\_\_  $^{\circ}\text{C}$  Lower: \_\_\_\_\_  $^{\circ}\text{C}$

Power voltage:  $V_{min}$  6 V  $V_{max}$  8 V

or V: \_\_\_\_\_ V  AC  DC Recommended:  AC  DC

Humidity evaluation symbol: NH  Yes  No  
 SH  Yes  No  
 CH or no markings  Yes  No

Electronic load cell:  Yes  No

Note: This value of  $p_{LC}$  is assumed to be 0.7 unless otherwise declared by the manufacturer.

**Information concerning the pattern (continued)**

Application No: 24-003

Specify other conditions that must be observed to obtain the specified performance  
(for example, electrical characteristics of the load cell):

Various designs within model range:

Maximum capacity $E_{max}$ (kg)	Minimum load cell verification interval $v_{min}$ (kg)	Minimum dead load $E_{min}$ (t)	Maximum number of load cell intervals $n_{max}$	Minimum dead load output return DR (t)
1000	0.125	0	3000	-
3000	0.375	0	3000	-
5000	0.625	0	3000	-

All values in this table are taken from documentation pages \_\_\_\_\_

DR information required only when applicable.

Load cell(s) submitted:

Model designation	Serial number	$E_{max}$ (kg)
LB-XD-1T-HCS	22T0810901	1000

Secondary equipment (specify load adapters, etc.):

Remarks:

**General information concerning test conditions**

Ref.:A3

Application no.: 24-003Load cell model: LB-XD-1T-HCS Serial no.: 22T0810901  $E_{\max}$ : 1000 kg $n_{\max}$ : 3000  $v_{\min}$ : 0.125 kg DR (if applicable): —Force-generating system - description: Load cell performance testing device  
(see Note)Minimum test load: 4.7 kgIndicating instrument - description: KS-C7200Environmental equipment - description: Air Supply Equipment ASE-210Temperature: 20.3 °CRelative humidity: 47.0 ~ 47.2 %Barometric pressure: 100.58 ~ 102.23 kPaTest location: Room 023Acceleration of gravity at test location: 9.79949 m/sec<sup>2</sup>Evaluator: Fukuda / Otani / Takahashi / Yamada*Note* : Include information concerning accuracy (for example, accredited laboratory).

**Summary of the test**

Application no.: 24-003

Load cell model: LB-XD-1T-HCS

Serial no.: 22T0810901

 $E_{max}$ : 1000 kg $v_{min}$ : 0.125 kg $n_{max}$ : 3000

DR: —

Force-generating system: Load cell performance testing device

 $p_{LC}$ : 0.8

Indicating instrument: KS-C7200

Evaluator: Fukuda / Otani / Takahashi / Yamada

No.	Test description	Passed	Failed	Report page	Remarks
D.2	Load cell errors ( $E_L$ )	×		10	
D.3	Repeatability errors ( $E_R$ )	×		11	
D.4	Temperature effects on MDLO ( $C_M$ )	×		12	
D.5	Creep ( $C_C$ )	×		13-16	
D.5	DR( $C_{DR}$ )	×		13-16	(see Note 2) DR: 0.16 kg
D.6	Barometric pressure effects ( $C_p$ )	×		17	
D.7	Humidity effects (CH or no mark) ( $C_{Hmin}$ )	×		18	
D.7	Humidity effects (CH or no mark) ( $C_{Hmax}$ )	×		18	
D.8	Humidity effects (SH)				NA
D.9	Marking requirements	See Page 19, Check that marked values are correct.			
D.10	Load cells equipped with electronics	×		20	
D.11	Warm-up time	×		21	
D.12	Power voltage variations	×		22	
D.13	Short time power reductions				NA
D.14	Bursts (electrical fast transients)	×		23-24	
D.15	Electrostatic discharge	×		25-27	
D.16	Electromagnetic susceptibility	×		28-29	
D.17	Span stability	×		30-33	

The following table checks the required calculations as per the General notes provisions of C.4:

Paragraph No.	Description	$n_{max}$		$n_{max}-500$		$n_{max}-1000$	
		Pass	Fail	Pass	Fail	Pass	Fail
C.4.2, C.4.3, C.4.5	Check all calculations using values of $n$ at $n_{max}$ and at lower than $n_{max}$	×		×		×	
C.4.4	Check that $v_{min} \leq \frac{D_{max}-D_{min}}{n_{max}}$	Pass		Fail			
		×					

Worst case figure for minimum dead load output return error (in mass units) = DR = 0.16 kg see Note 3

- Notes:
- 1 Enter "NA" for "the test is not applicable".
  - 2 Record error to accommodate OIML R76.
  - 3 This DR value is used in association with OIML R 76.

**Form D.1 (3 runs) Load test data (E<sub>L</sub>)**

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 PLC: 0.8 DR: - kg  
 Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

	At start	At end	
Date:	2012/2/15	2012/2/15	
Temperature:	20.3	20.3	°C
Relative humidity:	47.2	47.2	%
Barometric pressure:	100.58	100.63	kPa
Indicator temperature:	23.1	23.3	°C

Electronics power voltage (when applicable): \_\_\_\_\_ V

**Table D.1 (3 runs)**

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	3488.7	13:14:25						
1000	609686.6	13:14:54						
0	3478.0	13:15:23						
1000	609687.4	13:15:52						
0	3480.9	13:16:21						
1000	609686.7	13:16:50						
0	3474.2	13:17:19						
0	3492.1	13:22:29	3491.7	13:30:34	3486.6	13:38:38	3490.11 *	5.6
100	63487.1	13:22:50	63484.6	13:30:55	63486.2	13:38:59	63485.96	2.6
200	123500.2	13:23:10	123496.4	13:31:15	123496.4	13:39:19	123497.70	3.8
300	183507.4	13:23:31	183504.2	13:31:36	183505.0	13:39:40	183505.56	3.2
400	243528.9	13:23:52	243529.9	13:31:56	243525.9	13:40:00	243528.22	4.0
500	303539.1	13:24:12	303532.7	13:32:17	303529.1	13:40:21	303533.63	10.0
600	363562.1	13:24:33	363564.2	13:32:37	363565.2	13:40:41	363563.85	3.1
700	423592.4	13:24:54	423587.3	13:32:57	423585.0	13:41:01	423588.26	7.4
800	483619.9	13:25:14	483620.9	13:33:18	483622.8	13:41:22	483621.19	2.9
900	543653.6	13:25:35	543648.4	13:33:38	543654.1	13:41:42	543652.04	5.7
1000	603675.4	13:25:56	603673.6	13:33:59	603675.9	13:42:03	603674.96	2.3
900	543666.2	13:26:16	543669.8	13:34:19	543668.0	13:42:23	543668.00	3.6
800	483659.9	13:26:37	483655.1	13:34:40	483664.4	13:42:44	483659.81	9.3
700	423647.6	13:26:57	423642.0	13:35:01	423649.1	13:43:05	423646.22	7.1
600	363635.6	13:27:18	363632.0	13:35:22	363631.3	13:43:26	363632.96	4.2
500	303614.4	13:27:39	303611.3	13:35:43	303612.1	13:43:47	303612.63	3.1
400	243587.8	13:28:00	243593.2	13:36:03	243590.2	13:44:07	243590.41	5.4
300	183566.3	13:28:21	183568.0	13:36:24	183567.3	13:44:28	183567.22	1.7
200	123539.7	13:28:41	123534.7	13:36:45	123542.6	13:44:49	123538.96	7.9
100	63511.7	13:29:02	63513.6	13:37:06	63508.4	13:45:10	63511.22	5.1
0	3484.0	13:29:23	3481.3	13:37:27	3485.2	13:45:31	3483.52	3.9

Notes: 1 \* = Average initial minimum test load indication.  
 2 Absolute (not relative) time shall be recorded.

**Form D.1 (3 runs) Load test data (E<sub>L</sub>)**

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 PLC: 0.8 DR: - kg

	At start	At end	
Date:	2012/2/16	2012/2/16	
Temperature:	40.2	40.2	°C
Relative humidity:	34.4	34.9	%
Barometric pressure:	101.32	101.33	kPa
Indicator temperature:	24.2	24.0	°C

Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

Electronics power voltage (when applicable): \_\_\_\_\_ V

**Table D.1 (3 runs)**

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	3464.7	8:25:23						
1000	609677.3	8:25:52						
0	3474.1	8:26:21						
1000	609681.4	8:26:50						
0	3477.2	8:27:19						
1000	609691.2	8:27:48						
0	3481.3	8:28:17						
0	3481.6	8:33:27	3495.8	8:41:32	3503.6	8:49:35	3493.63 *	22.0
100	63470.9	8:33:48	63493.7	8:41:53	63501.9	8:49:56	63488.81	31.0
200	123484.8	8:34:08	123499.8	8:42:13	123503.8	8:50:16	123496.11	19.0
300	183493.4	8:34:29	183508.3	8:42:34	183518.9	8:50:37	183506.89	25.4
400	243511.1	8:34:50	243533.0	8:42:54	243539.3	8:50:57	243527.81	28.2
500	303532.2	8:35:10	303545.1	8:43:15	303551.0	8:51:18	303542.78	18.8
600	363555.7	8:35:31	363577.7	8:43:35	363580.2	8:51:38	363571.19	24.6
700	423588.4	8:35:52	423598.6	8:43:55	423610.7	8:51:58	423599.22	22.2
800	483621.9	8:36:12	483637.3	8:44:16	483646.7	8:52:19	483635.30	24.8
900	543663.4	8:36:33	543676.0	8:44:37	543683.0	8:52:40	543674.15	19.6
1000	603688.0	8:36:54	603697.6	8:44:57	603705.7	8:53:00	603697.07	17.7
900	543681.3	8:37:14	543693.8	8:45:18	543708.1	8:53:20	543694.41	26.8
800	483675.7	8:37:34	483689.0	8:45:38	483702.0	8:53:41	483688.89	26.3
700	423667.9	8:37:56	423677.0	8:45:59	423683.6	8:54:02	423676.15	15.7
600	363654.2	8:38:16	363666.2	8:46:20	363666.8	8:54:23	363662.41	12.6
500	303631.2	8:38:37	303644.6	8:46:41	303650.2	8:54:44	303642.00	19.0
400	243615.9	8:38:58	243613.9	8:47:02	243629.7	8:55:05	243619.81	15.8
300	183587.3	8:39:19	183597.1	8:47:22	183602.7	8:55:25	183595.70	15.3
200	123554.6	8:39:40	123564.0	8:47:43	123567.1	8:55:46	123561.89	12.6
100	63530.2	8:40:01	63535.6	8:48:04	63542.0	8:56:07	63535.93	11.8
0	3499.8	8:40:22	3510.0	8:48:25	3517.1	8:56:28	3508.96	17.3

Notes: 1 \* = Average initial minimum test load indication.  
 2 Absolute (not relative) time shall be recorded.



**Form D.1 (3 runs) Load test data (E<sub>L</sub>)**

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 PLC: 0.8 DR: - kg  
 Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

	At start	At end	
Date:	2012/2/17	2012/2/17	
Temperature:	-10.1	-10.0	°C
Relative humidity:	30.2	29.9	%
Barometric pressure:	100.74	100.75	kPa
Indicator temperature:	23.7	22.6	°C

Electronics power voltage (when applicable): \_\_\_\_\_ V

**Table D.1 (3 runs)**

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	3448.3	7:39:51						
1000	609677.1	7:40:20						
0	3466.0	7:40:49						
1000	609656.4	7:41:18						
0	3469.5	7:41:47						
1000	609663.1	7:42:16						
0	3459.9	7:42:45						
0	3473.1	7:47:55	3471.6	7:56:00	3469.6	8:04:03	3471.41	3.6
100	63477.1	7:48:16	63466.0	7:56:21	63463.8	8:04:24	63468.96	13.3
200	123480.3	7:48:36	123477.0	7:56:41	123471.2	8:04:44	123476.19	9.1
300	183489.9	7:48:57	183481.7	7:57:02	183475.8	8:05:05	183482.44	14.1
400	243508.2	7:49:18	243505.0	7:57:22	243491.0	8:05:25	243501.41	17.2
500	303527.4	7:49:39	303515.0	7:57:43	303518.3	8:05:46	303520.26	12.4
600	363544.2	7:49:59	363538.9	7:58:03	363534.6	8:06:06	363539.22	9.7
700	423565.3	7:50:20	423566.1	7:58:23	423554.6	8:06:26	423558.67	10.8
800	483592.9	7:50:40	483587.8	7:58:44	483584.8	8:06:47	483588.48	8.1
900	543621.0	7:51:01	543620.9	7:59:04	543622.3	8:07:08	543621.41	1.4
1000	603642.6	7:51:22	603641.3	7:59:25	603636.2	8:07:28	603640.04	6.3
900	543635.4	7:51:42	543627.2	7:59:45	543626.1	8:07:48	543629.59	9.3
800	483626.9	7:52:03	483622.8	8:00:06	483608.9	8:08:09	483619.52	18.0
700	423610.8	7:52:23	423606.6	8:00:27	423615.3	8:08:30	423610.89	8.8
600	363600.6	7:52:44	363595.7	8:00:48	363593.1	8:08:51	363596.44	7.4
500	303583.3	7:53:05	303579.6	8:01:09	303571.4	8:09:12	303578.11	11.9
400	243562.2	7:53:26	243563.0	8:01:30	243555.1	8:09:33	243560.11	7.9
300	183541.8	7:53:47	183540.7	8:01:50	183536.2	8:09:53	183539.56	5.6
200	123513.7	7:54:08	123506.9	8:02:11	123510.0	8:10:14	123510.19	6.8
100	63483.6	7:54:28	63482.2	8:02:32	63484.1	8:10:35	63483.30	1.9
0	3462.0	7:54:49	3460.4	8:02:53	3458.3	8:10:56	3460.26	3.7

Notes: 1 \* = Average initial minimum test load indication.  
 2 Absolute (not relative) time shall be recorded.

**Form D.1 (3 runs) Load test data (E<sub>L</sub>)**

Ref.: A.4.1.1 to A.4.1.11. Complete one sheet for each test temperature, one for each humidity (SH) test in A.4.6, and when applicable, one for each electronics power voltage in A.4.7.3.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 PLC: 0.8 DR: - kg

	At start	At end	
Date:	2012/2/20	2012/2/20	
Temperature:	20.3	20.3	°C
Relative humidity:	47.0	47.2	%
Barometric pressure:	102.19	102.23	kPa
Indicator temperature:	24.3	24.2	°C

Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

Electronics power voltage (when applicable): \_\_\_\_\_ V

**Table D.1 (3 runs)**

Test load (kg)	Run no. 1		Run no. 2		Run no. 3		Average indication (count)	Repeatability error (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time		
0	3515.4	7:11:15						
1000	609749.7	7:11:44						
0	3519.4	7:12:13						
1000	609740.4	7:12:42						
0	3525.6	7:13:11						
1000	609743.7	7:13:40						
0	3519.2	7:14:09						
0	3529.2	7:19:19	3532.4	7:27:23	3530.3	7:35:27	3530.67 *	3.2
100	63525.7	7:19:40	63533.7	7:27:44	63534.2	7:35:48	63531.19	8.6
200	123534.9	7:20:00	123529.4	7:28:04	123543.2	7:36:08	123535.85	13.8
300	183548.1	7:20:21	183547.9	7:28:25	183555.6	7:36:29	183550.52	7.7
400	243573.6	7:20:42	243570.7	7:28:45	243573.6	7:36:49	243572.59	2.9
500	303591.4	7:21:02	303590.0	7:29:06	303582.3	7:37:09	303587.93	9.1
600	363618.2	7:21:23	363611.1	7:29:26	363613.6	7:37:30	363614.30	7.1
700	423635.4	7:21:44	423638.2	7:29:46	423645.3	7:37:50	423639.67	9.9
800	483673.4	7:22:04	483676.2	7:30:07	483671.0	7:38:11	483673.56	5.2
900	543708.3	7:22:25	543708.2	7:30:28	543714.4	7:38:32	543710.33	6.2
1000	603725.1	7:22:46	603734.9	7:30:48	603736.1	7:38:52	603732.04	11.0
900	543723.9	7:23:06	543723.9	7:31:08	543730.6	7:39:12	543726.11	6.7
800	483706.8	7:23:27	483708.7	7:31:29	483714.4	7:39:33	483709.96	7.7
700	423699.2	7:23:47	423702.3	7:31:50	423697.1	7:39:54	423699.56	5.2
600	363679.6	7:24:08	363684.0	7:32:11	363688.0	7:40:15	363683.85	8.4
500	303660.9	7:24:29	303661.3	7:32:32	303667.9	7:40:36	303663.37	7.0
400	243642.1	7:24:50	243636.9	7:32:52	243640.1	7:40:57	243639.70	5.2
300	183612.6	7:25:11	183611.7	7:33:13	183620.4	7:41:17	183614.89	8.8
200	123584.6	7:25:31	123588.8	7:33:34	123585.6	7:41:38	123586.30	4.2
100	63554.8	7:25:52	63555.0	7:33:55	63559.7	7:41:59	63556.48	4.9
0	3528.1	7:26:13	3527.4	7:34:16	3528.2	7:42:20	3527.93	0.8

Notes: 1 \* = Average initial minimum test load indication.  
 2 Absolute (not relative) time shall be recorded.

**Form D.2 Load cell errors (E<sub>L</sub>) calculation**

Ref.: 5.1.1; A.4.1.12 to A.4.1.14; C.2.2.

Application no.:	<u>24-003</u>								
Load cell model:	<u>LB-XD-1T-HCS</u>								
Serial no.:	<u>22T0810901</u>								
E <sub>max</sub> :	<u>1000 kg</u>								
η <sub>max</sub> :	<u>3000</u>								
V <sub>min</sub> :	<u>0.125 kg</u>								
P <sub>LC</sub> :	<u>0.8</u>	DR:	<u>—</u>						
Force-generating system:	<u>Load cell performance testing device</u>	Conversion factor, f:	<u>200.05</u>						
Indicating instrument:	<u>KS-C7200</u>	75% test load:	<u>750 kg</u>						
Evaluator:	<u>Fukuda</u>	Reference indication at 75% test load:	<u>450138.6</u>						

	At start	At end	
Date:	2012/2/15	2012/2/20	
Test temperature:	20.3	20.3	°C
Relative humidity:	47.2	47.2	%
Barometric pressure:	100.58	102.23	kPa
Indicator temperature:	23.1	24.2	°C

**Table D.2**

Test load (kg)	Reference indication (count)	20.3 °C (20°C)		40.2 °C (40°C)		-10.0 °C (-10°C)		20.3 °C (20°C)		mpe (V)
		Indication (count)	Error(E <sub>L</sub> ) (V)	Indication (count)	Error(E <sub>L</sub> ) (V)	Indication (count)	Error(E <sub>L</sub> ) (V)	Indication (count)	Error(E <sub>L</sub> ) (V)	
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
100	60015.28	59995.85	-0.10	59995.19	-0.10	59997.56	-0.09	60000.52	-0.07	0.40
200	120030.56	120007.59	-0.11	120002.48	-0.14	120004.78	-0.13	120005.19	-0.13	0.80
300	180045.84	180015.44	-0.15	180013.26	-0.16	180011.04	-0.17	180019.85	-0.13	0.80
400	240061.13	240038.11	-0.12	240034.19	-0.13	240030.00	-0.16	240041.93	-0.10	0.80
500	300076.41	300043.52	-0.16	300049.15	-0.14	300048.85	-0.14	300057.26	-0.10	1.20
600	360091.69	360073.74	-0.09	360077.56	-0.07	360067.81	-0.12	360083.63	-0.04	1.20
700	420106.97	420098.15	-0.04	420105.59	-0.01	420087.26	-0.10	420109.00	0.01	1.20
800	480122.25	480131.07	0.04	480141.67	0.10	480117.07	-0.03	480142.89	0.10	1.20
900	540137.53	540161.93	0.12	540180.52	0.21	540150.00	0.06	540179.67	0.21	1.20
1000	600152.81	600184.85	0.16	600203.44	0.25	600168.63	0.08	600201.37	0.24	1.20
900	540137.53	540177.89	0.20	540200.78	0.32	540158.19	0.10	540195.44	0.29	1.20
800	480122.25	480169.70	0.24	480195.26	0.36	480148.11	0.13	480179.30	0.29	1.20
700	420106.97	420156.11	0.25	420182.52	0.38	420139.48	0.16	420168.89	0.31	1.20
600	360091.69	360142.85	0.26	360168.78	0.39	360125.04	0.17	360153.19	0.31	1.20
500	300076.41	300122.52	0.23	300148.37	0.36	300106.70	0.15	300132.70	0.28	1.20
400	240061.13	240100.30	0.20	240126.19	0.33	240088.70	0.14	240109.04	0.24	0.80
300	180045.84	180077.11	0.16	180102.07	0.28	180068.15	0.11	180084.22	0.19	0.80
200	120030.56	120048.85	0.09	120068.26	0.19	120038.78	0.04	120055.63	0.13	0.80
100	60015.28	60021.11	0.03	60042.30	0.14	60011.89	-0.02	60025.81	0.05	0.40
0	0.00	-6.59	-0.03	15.33	0.08	-11.15	-0.06	-2.74	-0.01	0.40

Minimum test load, D<sub>min</sub>: 4.7 kg

PASS:  FAIL:

**Notes:**

- 1 Load/reference indications: if a 75% load point was not obtained, a straight line interpolation between the adjacent higher and lower load point indications is used (see 5.2.2 and calculation procedures in C.2.2).
- 2 Error, E<sub>L</sub>: the difference between the test indication and the reference indication divided by the conversion factor, f.
- 3 Test load values are values above minimum test load, D<sub>min</sub>.

**Form D.3 Repeatability errors ( $E_R$ ) calculation**

Ref.: 5.4; A.4.1.13; C.2.3.

Application no.: 24-003

Load cell model: LB-XD-1T-HCS

Serial no.: 22T0810901

$E_{max}$ : 1000 kg

$n_{max}$ : 3000

$v_{min}$ : 0.125 kg

$p_{LC}$ : 0.8 DR: —

Force-generating system: Load cell performance testing device

Conversion factor, f: 200.05

Indicating instrument: KS-C7200

Evaluator: Fukuda

**Table D.3**

Test load (kg)	20.3 °C (20°C)		40.2 °C (40°C)		-10.0 °C (-10°C)		20.3 °C (20°C)		mpe (V)
	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	Repeatability error (count)	Repeatability error (V)	
0	5.6	0.03	22.0	0.11	3.6	0.02	3.2	0.02	0.40
100	2.6	0.01	31.0	0.15	13.3	0.07	8.6	0.04	0.40
200	3.8	0.02	19.0	0.09	9.1	0.05	13.8	0.07	0.80
300	3.2	0.02	25.4	0.13	14.1	0.07	7.7	0.04	0.80
400	4.0	0.02	28.2	0.14	17.2	0.09	2.9	0.01	0.80
500	10.0	0.05	18.8	0.09	12.4	0.06	9.1	0.05	1.20
600	3.1	0.02	24.6	0.12	9.7	0.05	7.1	0.04	1.20
700	7.4	0.04	22.2	0.11	10.8	0.05	9.9	0.05	1.20
800	2.9	0.01	24.8	0.12	8.1	0.04	5.2	0.03	1.20
900	5.7	0.03	19.6	0.10	1.4	0.01	6.2	0.03	1.20
1000	2.3	0.01	17.7	0.09	6.3	0.03	11.0	0.05	1.20
900	3.6	0.02	26.8	0.13	9.3	0.05	6.7	0.03	1.20
800	9.3	0.05	26.3	0.13	18.0	0.09	7.7	0.04	1.20
700	7.1	0.04	15.7	0.08	8.8	0.04	5.2	0.03	1.20
600	4.2	0.02	12.6	0.06	7.4	0.04	8.4	0.04	1.20
500	3.1	0.02	19.0	0.09	11.9	0.06	7.0	0.03	1.20
400	5.4	0.03	15.8	0.08	7.9	0.04	5.2	0.03	0.80
300	1.7	0.01	15.3	0.08	5.6	0.03	8.8	0.04	0.80
200	7.9	0.04	12.6	0.06	6.8	0.03	4.2	0.02	0.80
100	5.1	0.03	11.8	0.06	1.9	0.01	4.9	0.02	0.40
0	3.9	0.02	17.3	0.09	3.7	0.02	0.8	0.00	0.40

PASS:  x

FAIL:

**Note:** Error,  $E_R$ : the maximum difference between the three test indications divided by the conversion factor, f (classes C and D) or the maximum difference between the five test indications divided by the conversion factor, f (classes A and B).

**D.4 Temperature effects on MDLO (C<sub>M</sub>) calculation**

Ref.: 5.5.1.3; A.4.1.14; C.2.4.

Application no.: 24-003

Load cell model: LB-XD-1T-HCS

Serial no.: 22T0810901

E<sub>max</sub>: 1000 kg

n<sub>max</sub>: 3000

V<sub>min</sub>: 0.125 kg

P<sub>LC</sub>: 0.8 DR: —

Force-generating system: Load cell performance testing device Conversion factor, f: 200.05

Indicating instrument: KS-C7200

Evaluator: Fukuda

**Table D.4**

Temperature °C	Indication (count)	Change (C <sub>M</sub> ) (V)	Change (v <sub>min</sub> /5 °C)	mpc (v <sub>min</sub> /5 °C)
20.3	3490.11			
40.2	3493.63	0.02	0.01	0.80
-10.0	3471.41	-0.11	0.03	0.80
20.3	3530.67	0.30	0.13	0.80

PASS:  FAIL:

**Notes:**

- 1 MDLO: minimum dead load output.
- 2 Indication: the average initial minimum test load indication obtained from Table D.1.
- 3 The maximum permissible change(mpc) allowed is: (v<sub>min</sub>/5°C) for classes B, C, and D; (v<sub>min</sub>/2°C) for class A.
- 4 Change, C<sub>M</sub>(v): the difference between the observed indications, and the indications at the prior temperature, divided by the conversion factor, f.

**Form D.5 Creep (Cc) and DR (CDR)**

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 $E_{max}$ : 1000 kg  
 $n_{max}$ : 3000  
 $V_{min}$ : 0.125 kg  
 $P_{LC}$ : 0.8 DR: —

	At start	At end	
Date:	2012/2/15	2012/2/15	
Temperature:	20.3	20.3	°C
Relative humidity:	47.2	47.7	%
Barometric pressure:	100.68	100.63	kPa
Indicator temperature:	24.0	22.9	°C

Force generating system: Load cell performance testing device Conversion factor, f: 182.10  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.5**

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	3489.1	100.68	14:45:49		←initial "no load" indication
Fill in time →	Record time of initial loading →			14:45:49		
(**) →	900	549779.0	100.68	14:46:19	0.00	0.735 ←initial "load" indication
Constant maximum test load, Dmax	900	549763.1	100.68	14:47:18	-0.09	0.735
	900	549759.9	100.68	14:48:17	-0.10	0.735
	900	549760.7	100.68	14:49:16	-0.10	0.735
	900	549762.7	100.69	14:50:15	-0.09	0.735
	900	549758.2	100.68	14:51:15	-0.11	0.735
	900	549764.7	100.68	14:52:14	-0.08	0.735
	900	549754.2	100.68	14:53:13	-0.14	0.735
	900	549754.8	100.69	14:54:12	-0.13	0.735
	900	549756.7	100.69	14:55:11	-0.12	0.735
	900	549758.2	100.68	14:56:10	-0.11	0.735
	900	549753.9	100.66	15:01:09	-0.14	0.735
	900	549763.0	100.65	15:06:08	-0.09	0.735
	900	549764.1	100.62	15:11:07	-0.08	0.735
	900	549762.0	100.62	15:16:06	-0.09	0.735
Fill in time →	Record time of initial unloading →			15:16:06		
(***) →	0	3481.4	100.62	15:16:35	-0.04	0.500 ←initial indication
These rows are for reference purposes only	0	3487.0	100.62	15:16:54	-0.01	0.500
	0	3493.7	100.62	15:17:13	0.03	0.500
	0	3493.6	100.62	15:17:32	0.02	0.500
	0	3499.3	100.62	15:17:51	0.06	0.500
	0	3493.3	100.62	15:18:10	0.02	0.500
30-20 minute creep difference in units:					-0.01	0.1575

DR (v):	-0.04	30 minute creep:	PASS:	x	FAIL:	
actual time (s):	30	30-20 minute creep difference:	PASS:	x	FAIL:	
specified time (s):	30	DR ≤ 0.5v:	PASS:	x	FAIL:	
mpc for DR (v):	0.50	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (\*\*) divided by the conversion factor, f.
  - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
  - 3 Change (v) for DR: the initial indication (\*\*\*) minus the initial "no load" indication (\*) divided by the conversion factor, f.
  - 4 Absolute (not relative) time shall be recorded.

**Form D.5 Creep (Cc) and DR (CDR)**

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 P<sub>LC</sub>: 0.8 DR: —

	At start	At end	
Date:	2012/2/16	2012/2/16	
Temperature:	40.2	40.2	°C
Relative humidity:	34.7	34.7	%
Barometric pressure:	101.30	101.30	kPa
Indicator temperature:	23.2	23.3	°C

Force generating system: Load cell performance testing device Conversion factor, f: 182.10  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.5**

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) → 0	3486.7	101.30	9:56:13			←initial "no load" indicatio
Fill in time →	Record time of initial loading →		9:56:13			
(**) → 900	549771.3	101.29	9:56:43	0.00	0.735	←initial "load" indication
Constant maximum test load, D <sub>max</sub>	900	549775.0	9:57:43	0.02	0.735	
	900	549775.4	9:58:42	0.02	0.735	
	900	549786.3	9:59:41	0.08	0.735	
	900	549791.1	10:00:40	0.11	0.735	
	900	549795.1	10:01:39	0.13	0.735	
	900	549796.8	10:02:39	0.14	0.735	
	900	549799.7	10:03:38	0.16	0.735	
	900	549805.1	10:04:37	0.19	0.735	
	900	549811.7	10:05:36	0.22	0.735	
	900	549810.3	10:06:35	0.21	0.735	
	900	549826.3	10:11:34	0.30	0.735	
	900	549837.8	10:16:33	0.36	0.735	
	900	549848.4	10:21:32	0.42	0.735	
	0	549855.7	101.30	10:26:31	0.46	0.735
Fill in time →	Record time of initial unloading →		10:26:31			
(***) → 0	3573.1	101.30	10:27:00	0.47	0.500	←initial indication
These rows are for reference purposes only	0	3570.2	10:27:20	0.46	0.500	
	0	3567.6	10:27:39	0.44	0.500	
	0	3567.4	10:27:58	0.44	0.500	
	0	3561.1	10:28:17	0.41	0.500	
	0	3564.0	10:28:36	0.42	0.500	
30-20 minute creep difference in units:				0.10	0.1575	

DR (v):	0.47	30 minute creep:	PASS:	×	FAIL:	
actual time (s):	30	30-20 minute creep difference:	PASS:	×	FAIL:	
specified time (s):	30	DR ≤ 0.5v:	PASS:	×	FAIL:	
mpc for DR (v):	0.50	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (\*\*) divided by the conversion factor, f.
  - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
  - 3 Change (v) for DR: the initial indication (\*\*\*) minus the initial "no load" indication (\*) divided by the conversion factor, f.
  - 4 Absolute (not relative) time shall be recorded.

**Form D.5 Creep (Cc) and DR (CDR)**

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 $E_{max}$ : 1000 kg  
 $n_{max}$ : 3000  
 $V_{min}$ : 0.125 kg  
 $P_{LC}$ : 0.8 DR: -

	At start	At end	
Date:	2012/2/17	2012/2/17	
Temperature:	-10.1	-10.0	°C
Relative humidity:	30.2	29.9	%
Barometric pressure:	100.74	100.75	kPa
Indicator temperature:	23.7	22.6	°C

Force generating system: Load cell performance testing device Conversion factor, f: 182.10  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.5**

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	3478.0	9:11:14			←initial "no load" indicatio
Fill in time →	Record time of initial loading →			9:11:14		
(**) →	900	549750.2	9:11:44	0.00	0.735	←initial "load" indication
Constant maximum test load, Dmax	900	549725.6	9:12:43	-0.14	0.735	
	900	549725.9	9:13:42	-0.13	0.735	
	900	549727.4	9:14:41	-0.13	0.735	
	900	549719.8	9:15:40	-0.17	0.735	
	900	549709.8	9:16:39	-0.22	0.735	
	900	549717.7	9:17:39	-0.18	0.735	
	900	549704.6	9:18:38	-0.25	0.735	
	900	549704.7	9:19:37	-0.25	0.735	
	900	549704.6	9:20:36	-0.25	0.735	
	900	549706.2	9:21:35	-0.24	0.735	
	900	549702.2	9:26:34	-0.26	0.735	
	900	549697.8	9:31:33	-0.29	0.735	
	900	549687.0	9:36:32	-0.35	0.735	
	900	549691.6	9:41:31	-0.32	0.735	
Fill in time →	Record time of initial unloading →			9:41:31		
(***) →	0	3416.8	9:42:00	-0.34	0.500	←initial indication
These rows are for reference purposes only	0	3430.8	9:42:19	-0.26	0.500	
	0	3434.0	9:42:38	-0.24	0.500	
	0	3431.7	9:42:57	-0.25	0.500	
	0	3444.4	9:43:16	-0.18	0.500	
	0	3438.1	9:43:35	-0.22	0.500	
30-20 minute creep difference in units:				-0.03	0.1575	

DR (v):	-0.34	30 minute creep:	PASS:	×	FAIL:	
actual time (s):	30	30-20 minute creep difference:	PASS:	×	FAIL:	
specified time (s):	30	DR ≤ 0.5v:	PASS:	×	FAIL:	
mpc for DR (v):	0.50	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes:
- 1 Change (v) for creep: the observed indication minus the initial "load" indication (\*\*) divided by the conversion factor, f.
  - 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).
  - 3 Change (v) for DR: the initial indication (\*\*\*) minus the initial "no load" indication (\*) divided by the conversion factor, f.
  - 4 Absolute (not relative) time shall be recorded.



**Form D.5 Creep (Cc) and DR (CDR)**

Ref.: 5.3.1, 5.3.2; A.4.2, A.4.3 Complete one sheet for each test temperature.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 $E_{max}$ : 1000 kg  
 $\eta_{max}$ : 3000  
 $V_{min}$ : 0.125 kg  
 $P_{LC}$ : 0.8 DR: —

	At start	At end	
Date:	2012/2/20	2012/2/20	
Temperature:	20.3	20.3	°C
Relative humidity:	46.5	46.8	%
Barometric pressure:	102.29	102.28	kPa
Indicator temperature:	24.4	23.6	°C

Force generating system: Load cell performance testing device Conversion factor, f: 182.10  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.5**

Test load (kg)	Indication (count)	Barometric pressure (kPa)	Time	Change (v)	mpc (v)	
0						
0						
0						
0						
(*) →	0	3530.7	102.29	8:42:38		← initial "no load" indicatio
Fill in time →	Record time of initial loading →			8:42:38		
(**) →	900	549833.4	102.29	8:43:08	0.00	← initial "load" indication
Constant maximum test load, Dmax	900	549816.8	102.29	8:44:07	-0.09	
	900	549813.9	102.29	8:45:06	-0.11	
	900	549812.2	102.29	8:46:05	-0.12	
	900	549813.0	102.29	8:47:04	-0.11	
	900	549813.1	102.29	8:48:04	-0.11	
	900	549819.0	102.29	8:49:03	-0.08	
	900	549819.0	102.29	8:50:02	-0.08	
	900	549819.2	102.29	8:51:01	-0.08	
	900	549817.9	102.29	8:52:00	-0.09	
	900	549821.7	102.29	8:52:59	-0.06	
	900	549819.3	102.28	8:57:58	-0.08	
	900	549829.3	102.28	9:02:57	-0.02	
	900	549828.7	102.27	9:07:56	-0.03	
	900	549831.2	102.27	9:12:55	-0.01	
	Fill in time →	Record time of initial unloading →			9:12:55	
(***) →	0	3530.4	102.28	9:13:24	0.00	← initial indication
These rows are for reference purposes only	0	3532.7	102.28	9:13:44	0.01	
	0	3539.7	102.28	9:14:03	0.05	
	0	3544.1	102.28	9:14:22	0.07	
	0	3544.2	102.28	9:14:41	0.07	
	0	3546.7	102.28	9:15:00	0.09	
	30-20 minute creep difference in units:					0.01

DR (v):	0.00	30 minute creep:	PASS:	x	FAIL:	
actual time (s):	30	30-20 minute creep difference:	PASS:	x	FAIL:	
specified time (s):	30	DR ≤ 0.5v:	PASS:	x	FAIL:	
mpc for DR (v):	0.50	DR within manufacturer specified DR requirements:	PASS:		FAIL:	

- Notes: 1 Change (v) for creep: the observed indication minus the initial "load" indication (\*\*) divided by the conversion factor, f.  
 2 Determine the difference between the reading obtained at 20 minutes and the reading obtained at 30 minutes (see 5.3.1).  
 3 Change (v) for DR: the initial indication (\*\*\*) minus the initial "no load" indication (\*) divided by the conversion factor, f.  
 4 Absolute (not relative) time shall be recorded.

**Form D.6 Barometric pressure effects (Cp)**

Ref.: 5.5.2; A.4.4.

		At start	At end	
Application no.:	24-003	2012/3/14	2012/3/14	
Load cell model:	LB-XD-1T-HCS	24.0	24.0	°C
Serial no.:	22T0810901	40.3	40.3	%
$E_{max}$ :	1000 kg	102.47	102.47	kPa
$n_{max}$ :	3000	24.0	24.0	°C
$V_{min}$ :	0.125 kg			
$\rho_{LC}$ :	0.8			
	DR: --			
Force-generating system:	--			
				Conversion factor, f: 200.05
Indicating instrument:	KS-C7200			
Evaluator:	Fukuda			

**Table D.6**

Pressure (kPa)	Indication (count)	Time	Change (V)	Change ( $V_{min}/kPa$ )	mpc ( $V_{min}/kPa$ )
102.47	315	9:26	0.00	0.00	0
103.47	316	9:27	0.00	0.01	1
102.47	314	9:27	-0.01	0.02	1
101.47	312	9:28	-0.01	0.02	1
102.47	313	9:28	0.00	0.01	1

PASS:  FAIL: 

Remarks:

- Notes:**
- 1 Change (v): the difference between the observed indication and the initial indication divided by the conversion factor, f.
  - 2 Although A.4.4 specifies a change of only 1 kPa for this test, additional measurements may be taken.
  - 3 Absolute (not relative) time shall be recorded.



**Form D.9 Marking requirements**

Ref.: 4.6, 4.7.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 $E_{max}$ : 1000 kg  
 $n_{max}$ : 3000  
 $v_{min}$ : 0.125 kg  
 $p_{LC}$ : 0.8 DR: —  
 Force-generating system: —  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.9.1**

R 60 reference	Mandatory information	On load cell	In document
4.6.1	Accuracy class designation	-	+
4.6.2	Maximum number of load cell verification intervals, $n_{max}$	-	+
4.6.3	Loading designation (if necessary)	-	+
4.6.4	Working temperature designation	/	/
4.6.5.1	Humidity symbol "NH"	/	/
4.6.5.3	Humidity symbol "SH"	/	/
4.6.6.1, 4.7.1	Name or trademark of manufacturer (see Note 1)	+	+
4.6.6.1, 4.7.1	Manufacturer's own designation or load cell model (see Note 1)	+	+
4.6.6.1, 4.7.1	Serial number (see Note 1)	+	+
4.6.6.1	Year of manufacture	+	-
4.6.6.1	Minimum dead load, $E_{min}$	-	+
4.6.6.1, 4.7.1	Maximum capacity, $E_{max}$ (see Note 1)	+	+
4.6.6.1	Safe load limit, $E_{lim}$	-	+
4.6.6.1	Minimum load cell verification interval ( $v_{min}$ )	-	+
4.6.6.1	Other pertinent conditions	-	-
4.6.6.1	Apportionment factor, $P_{LC}$ (if not equal to 0.7)	-	+
4.6.7	Standard classification	-	+
4.6.8	Multiple classifications	-	-

**Table D.9.2**

R 60 reference	Non-mandatory additional information	On load cell	In document
4.6.5.2	Humidity symbol "CH"	-	-
4.6.6.2	Relative $v_{min}$ , Y	-	-
4.6.6.2	Relative DR, Z	-	-

Include references to the following:

Documents supplied with load cells: \_\_\_\_\_

Diagrams showing markings on load cells: \_\_\_\_\_

- Notes:
- 1 Required both on load cell and in document.
  - 2 Indicate that the marking is present with a "+".
  - 3 Indicate that the marking is not present with a "-".
  - 4 Indicate that the marking is not applicable with a "/".

**Form D.10 Summary of results - Load cells equipped with electronics**

Ref.: Clause 6.

Application no.: 24-003

Load cell model: LB-XD-1T-HCS

Serial no.: 22T0810901

E<sub>max</sub>: 1000 kgn<sub>max</sub>: 3000V<sub>min</sub>: 0.125 kg

PLC: 1.0

DR: -

Force-generating system: Load cell performance testing device

Indicating instrument: KS-C7200

Evaluator: Fukuda / Otani / Takahashi / Yamada

**Table D.10 Summary of results**

Test description	Test procedure	Test report form no.	Passed	Failed	Remarks
Warm-up time	A.4.7.2	D.11	×		
Power voltage variations	A.4.7.3	D.12	×		
Short time power reductions	A.4.7.4	D.13			NA
Bursts(electrical fast transients)	A.4.7.5	D.14.1,D.14.2	×		
Electrostatic discharge	A.4.7.6	D.15.1,D.15.2,D15.3	×		
Electromagnetic susceptibility	A.4.7.7	D.16.1,D16.2	×		
Span stability test	A.4.7.8	D.17.1.1,D.17.2	×		

Additional remarks:

**Form D.11 Warm-up time**

Ref.: 6.3.2; A.4.7.2

Application no.:	24-003							
Load cell model:	LB-XD-1T-HCS							
Serial no.:	22T0810901							
E <sub>max</sub> :	1000 kg							
n <sub>max</sub> :	3000							
V <sub>min</sub> :	0.125 kg							
PLC:	1.0	DR:	—	Conversion factor, f:	182.10			
Force-generating system:	Load cell performance testing device	Minimum test load, Dmin:	0 kg					
Indicating instrument:	KS-C7200	Maximum test load, Dmax:	900 kg					
Evaluator:	Fukuda	Duration of disconnection before test:	23 hour					

	At start	At end
Date:	2012/2/23	2012/2/23
Time:	7:19:02	7:57:27
Temperature:	20.3	20.3
Relative humidity:	47.1	47.2
Barometric pressure:	100.79	100.73

**Table D.2**

	Initial run		After 5 min		After 15 min		After 30 min		mpc (v)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
Minimum test load	3548.11	7:27:03	3536.89	7:32:02	3534.67	7:42:00	3536.78	7:56:58	
Maximum test load	549846.00	7:27:32	549839.78	7:32:31	549837.78	7:42:29	549839.33	7:57:27	
Span(count)	546297.89		546302.89		546303.11		546302.56		
Span(v)	3000.04		3000.07		3000.07		3000.07		
Change(v)	0.00		0.03		0.03		0.03		1.50

PASS:  FAIL:

- Notes:
- 1 Absolute (not relative) time shall be recorded.
  - 2 Span: the result of subtracting the indication at minimum test load from the indication at maximum test load. All span errors (error at maximum test load minus the error at minimum test load) shall be within the maximum permissible error during the 30 minute test.
  - 3 Change: the difference between the span and the initial run span.
  - 4 Maximum permissible change, mpc: the absolute value of the maximum permissible error for the maximum test load applied.

**Form D.12 Power voltage variations**

Ref.: 6.3.3, 6.3.4; A.4.7.3.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg  
 PL: 1.0 DR: -  
 Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

Date: 2012/2/21  
 Time: 13:41  
 Temperature: 20.3 °C  
 Relative humidity: 47.2 %  
 Barometric pressure: 101.44 kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg  
 Maximum test load, D<sub>max</sub>: 1000 kg

Power voltage(A.4.7.3): Mains: 7 V Battery: -

Reference voltage or range(see Note 5): - V  
 Upper limit: 8 V  
 Lower limit: 6 V

**Table D.12**

Test load (kg)	Reference indication (count)	Upper limit		Lower limit		mpe (v)
		Indication (count)	Error (v)	Indication (count)	Error (v)	
0	0.00	0.00	0.00	0.00	0.00	0.50
100	60015.28	59998.22	-0.09	59999.33	-0.08	0.50
200	120030.56	120006.52	-0.12	120006.74	-0.12	1.00
300	180045.84	180013.30	-0.16	180016.81	-0.15	1.00
400	240061.13	240041.89	-0.10	240039.96	-0.11	1.00
500	300076.41	300056.78	-0.10	300054.67	-0.11	1.50
600	360091.69	360081.41	-0.05	360083.96	-0.04	1.50
700	420106.97	420112.67	0.03	420111.96	0.02	1.50
800	480122.25	480140.67	0.09	480140.67	0.09	1.50
900	540137.53	540178.89	0.21	540183.56	0.23	1.50
1000	600152.81	600202.19	0.25	600208.07	0.28	1.50
900	540137.53	540196.52	0.29	540192.89	0.28	1.50
800	480122.25	480183.41	0.31	480184.00	0.31	1.50
700	420106.97	420169.81	0.31	420172.15	0.33	1.50
600	360091.69	360150.26	0.29	360151.04	0.30	1.50
500	300076.41	300133.19	0.28	300136.33	0.30	1.50
400	240061.13	240109.78	0.24	240106.74	0.23	1.00
300	180045.84	180083.22	0.19	180087.67	0.21	1.00
200	120030.56	120051.33	0.10	120051.67	0.11	1.00
100	60015.28	60021.67	0.03	60023.22	0.04	0.50
0	0.00	-2.07	-0.01	-3.89	-0.02	0.50

PASS:  FAIL:

Equipment used (supply sketch if necessary) :

- Notes:
- 1 Upper limit not applicable to battery powered load cells.
  - 2 At lower limit, battery powered load cells shall function and be within mpe, or cease to function.
  - 3 Reference indications: if a 75% load point was not obtained, a straight line interpolation between the adjacent higher and lower load point indications is used (see 5.2.2 and calculation procedures in C.2.2).
  - 4 Error: the difference between the test indication and the reference indication divided by the conversion factor, f
  - 5 When a voltage range is marked, use the average value as the reference value and determine the upper and lower values of applied voltage according to A.4.7.3.

**Form D.14.1 Bursts(electrical fast transients)- power supply lines**

Ref.: 6.3.5; A.4.7.5.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg (=0.375V)  
 P.L.C: 1.0 DR: —  
 Force-generating system: —  
 Indicating instrument: KS-C7200  
 Evaluator: Otani / Yamada

Date:	<u>2012/3/21</u>
Time:	<u>9:18</u>
Temperature:	<u>20.7</u> °C
Relative humidity:	<u>53.4</u> %
Barometric pressure:	<u>100.92</u> kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg

**Table D.14.1**

Power supply lines: test voltage = 1kV; duration of the test = 1minute at each polarity.

Test load (kg)	Connection			Polarity	Result			
	L1	L2	PE		Indication (count)	Difference (v)	Significant fault > v <sub>min</sub>	
	to ground	to ground	to ground				No	Yes(remarks)
0	without disturbance				0			
	X	X	X	pos	7	0.04	X	
	X	X	X	neg	-6	-0.03	X	
	without disturbance							
				pos				
				neg				
	without disturbance							
				pos				
			neg					

PASS:  FAIL:

L = phase, N = neutral, PE = protective

Equipment used (supply sketch if necessary):

Remarks:

The capacitive coupling clamp was used because the power supply line is compound with the communication lines.



**Form D.14.2 Bursts (electrical fast transients)- I/O circuits and communications lines**

Ref.: 6.3.5; A.4.7.5.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg (=0.375V)  
 P<sub>LC</sub>: 1.0 DR: —  
 Force-generating system: —  
 Indicating instrument: KS-C7200  
 Evaluator: Otani / Yamada

Date:	2012/3/21
Time:	9:31
Temperature:	20.6 °C
Relative humidity:	54.6 %
Barometric pressure:	100.94 kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg

**Table D.14.2**

I/O signals, data and control lines: test voltage = 0.5 kV ; duration of the test = 1 minute at each polarity.

Test load (kg)	Connection	Polarity	Result			
			Indication (count)	Difference (v)	Significant fault > V <sub>min</sub>	
					No	Yes(remarks)
0	without disturbance		0			
	Load cell cable (communication lines)	pos	-6	-0.03	x	
		neg	-6	-0.03	x	
	without disturbance					
		pos				
		neg				
	without disturbance					
		pos				
		neg				
	without disturbance					
		pos				
		neg				
	without disturbance					
		pos				
		neg				

Equipment used (supply sketch if necessary):

PASS:  FAIL:

Remarks:

Note: Explain or make a sketch indicating where the clamp is located on the cable; if necessary, use additional page(s).

**Form D.15.1 Electrostatic discharge - direct application**

Ref.: 6.3.5; A.4.7.6.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg (=0.375V)  
 PLC: 1.0 DR: —  
 Force-generating system: —  
 Indicating instrument: KS-C7200  
 Evaluator: Takahashi

Date:	2012/3/21	
Time:	11:00	
Temperature:	21.0	°C
Relative humidity:	53.5	%
Barometric pressure:	101.01	kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg

<input checked="" type="checkbox"/> Contact discharges	Polarity (see Note 2):
<input type="checkbox"/> Paint penetration	<input checked="" type="checkbox"/> Positive
<input checked="" type="checkbox"/> Air discharges	<input checked="" type="checkbox"/> Negative

**Table D.15.1**

Test load (kg)	Discharges			Result			
	Test voltage (kV)	No. of discharges $\geq 10$	Repetition interval (s)	Indication (count)	Difference (v)	Significant fault > V <sub>min</sub>	
						No	Yes(remarks)
0	without disturbance			0			
	2	10	10	16	0.08	x	
	4	10	10	9	0.05	x	
	6	10	10	7	0.04	x	
	8(air discharges)	10	10	19	0.10	x	

PASS:  FAIL:

Remarks:

- Note: 1 If the load cell fails, the test point at which this occurs shall be recorded.  
 2 IEC Publication 61000-4-2 (1999-05) Ed 1.1 Consolidated edition specifies that the test be conducted with the most sensitive polarity.

**Form D.15.2 Electrostatic discharge - indirect application**

Ref.: 6.3.5; A.4.7.6.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg (=0.375V)  
 PLC: 1.0 DR: ---  
 Force-generating system: ---  
 Indicating instrument: KS-C7200  
 Evaluator: Otani/ Yamada

Date: 2012/3/21  
 Time: 9:40  
 Temperature: 20.6 °C  
 Relative humidity: 54.4 %  
 barometric pressure: 100.94 kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg

Polarity (see Note 2):  Positive  Negative

**Table D.15.2.1 - Horizontal coupling plane**

Test load (kg)	Discharges			Result			
	Test voltage (kV)	No. of discharges ≥ 10	Repetition interval (s)	Indication (count)	Difference (v)	Significant fault > V <sub>min</sub>	
						No	Yes(remarks)
0	without disturbance			0			
	2	10	10	8	0.04	x	
	4	10	10	-8	-0.04	x	
	6	10	10	9	0.05	x	

**Table D.15.2.2 - Vertical coupling plane**

Test load (kg)	Discharges			Result			
	Test voltage (kV)	No. of discharges ≥ 10	Repetition interval (s)	Indication (count)	Difference (v)	Significant fault > V <sub>min</sub>	
						No	Yes(remarks)
0	without disturbance			0			
	2	10	10	-8	-0.04	x	
	4	10	10	-10	-0.05	x	
	6	10	10	-8	-0.04	x	

PASS:  FAIL:

Remarks:

- Note: 1 If the load cell fails, the test point at which this occurs shall be recorded.  
 2 IEC Publication 61000-4-2 (1999-05) Ed 1.1 Consolidated edition specifies that the test be conducted with the most sensitive polarity.

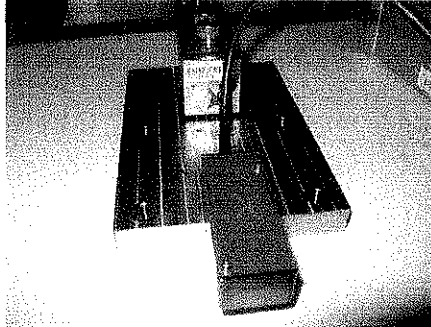
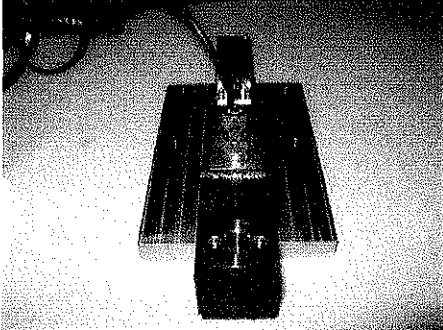
**Form D.15.1 Electronic discharge (continued) - specification of test points**

Ref.: D.15.1 and D.15.2.

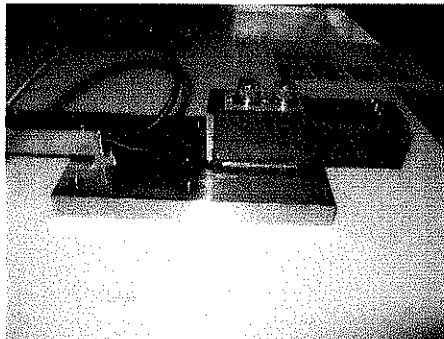
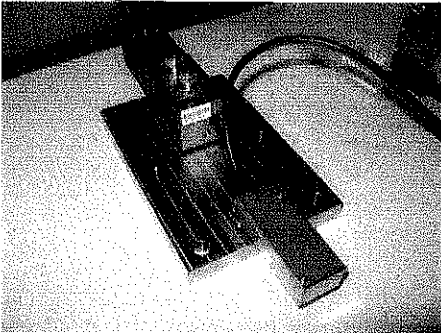
Specify test points utilized on load cell and test equipment used, e.g. by photos or sketches.

a) Direct applications

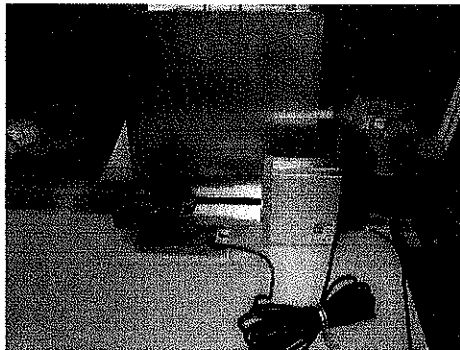
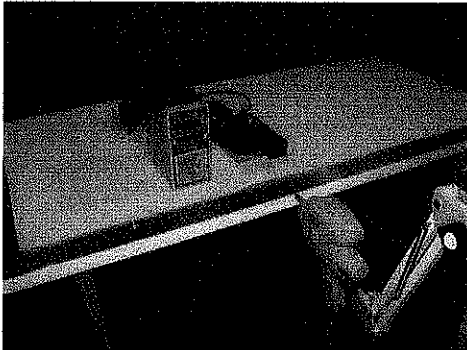
Contact discharges:



Air discharges:



b) Indirect applications



**Form D.16.1 Electromagnetic susceptibility**

Ref.: 6.3.5; A.4.7.7.

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 E<sub>max</sub>: 1000 kg  
 n<sub>max</sub>: 3000  
 V<sub>min</sub>: 0.125 kg (=0.375V)  
 p<sub>LC</sub>: 1.0 DR: --  
 Force-generating system: --  
 Indicating instrument: KS-C7200  
 Evaluator: Otani/Yamada

Date: 2012/3/16  
 Time: 8:53  
 Temperature: 19.7 °C  
 Relative humidity: 33.6 %  
 Barometric pressure: 102.41 kPa

Conversion factor, f: 200.05  
 Minimum test load, D<sub>min</sub>: 0 kg

Rate of sweep: 3 s

Test load: 0 kg Test load material: -

**Table D.16.1**

Disturbance				Result			
Antenna	Frequency range (MHz)	Polarization	Facing load cell	Indication (count)	Difference (v)	Significant fault > V <sub>min</sub>	
						No	Yes(remarks)
without disturbance				0			
Bi-log	26-1000	Vertical	Front	26	0.13	x	
			Right	10	0.05	x	
			Left	-9	-0.05	x	
			Rear	-11	-0.06	x	
	26-1000	Horizontal	Front	13	0.07	x	
			Right	16	0.08	x	
			Left	21	0.11	x	
			Rear	25	0.13	x	

PASS: x FAIL:

Frequency range: 26 - 1 000 MHz  
 Field strength: 3 V/m  
 Modulation: 80 % AM, 1 kHz sine wave

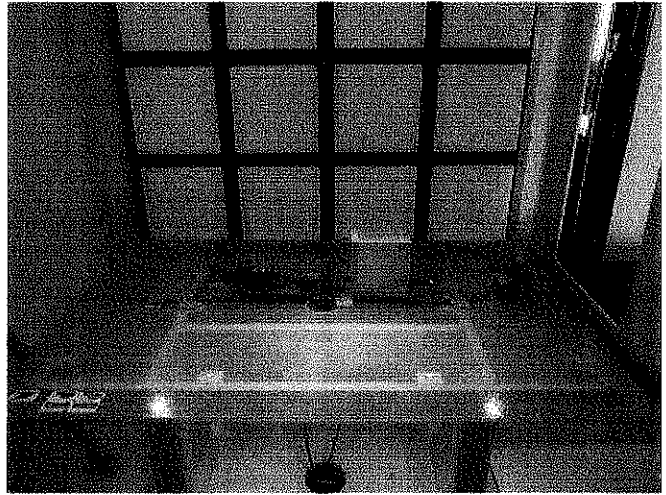
Remarks:

Note: If the load cell fails, the test point at which this occurs shall be recorded.

**Form D.16.2 Electromagnetic susceptibility (continued) - description of the test set-up**

Ref.: D.16.1.

Describe the set-up of test and equipment, e.g. by photos or sketches.



**Form D.17.1.1(3 runs) Span stability-measurement data for classes C and D**

Ref.: 6.3.6/A.4.7.8

Application no.: 24-003

Force-generating system: Load cell performance testing device

Load cell model: LB-XD-1T-HCS

Indicating instrument: KS-C7200

Serial no: 22T0810901

PLC: 1.0 DR: -

 $E_{\max}$ : 1000 kg

Conversion factor, f: 182.10

 $n_{\max}$ : 3000Minimum test load,  $D_{\min}$ : 0 kg $v_{\min}$ : 0.125 kgMaximum test load,  $D_{\max}$ : 900 kg**Table D.17.1.1(3 runs)  
Measurement no. 1:**

Test load (kg)	Run no.1		Run no.2		Run no.3		Average indication (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
0	3489.67	13:08:31	3478.00	13:09:30	3480.33	13:10:28	3482.67
900	549772.78	13:09:00	549769.67	13:09:58	549771.33	13:10:56	549771.26
						Span	546288.59

Date: 2012/2/15

Time: 13:00:20

Temperature: 20.3 °C

Relative humidity: 47.3 %

Barometric pressure: 100.62 kPa

Evaluator: Fukuda Remarks:

**Measurement no. 2:**

Test load (kg)	Run no.1		Run no.2		Run no.3		Average indication (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
0	3530.44	7:27:46	3523.89	7:28:45	3520.00	7:29:43	3524.78
900	549833.11	7:28:15	549834.78	7:29:13	549826.89	7:30:11	549831.59
						Span	546306.81

Date: 2012/2/21

Time: 7:19:35

Temperature: 20.3 °C

Relative humidity: 46.9 %

Barometric pressure: 101.85 kPa

Evaluator: Fukuda Remarks:

**Form D.17.1.1(3 runs) Span stability-measurement data for classes C and D (continued)****Measurement no. 3:**

Test load ( kg )	Run no.1		Run no.2		Run no.3		Average indication ( count )
	Indication ( count )	Time	Indication ( count )	Time	Indication ( count )	Time	
0	3534.67	7:34:21	3529.44	7:35:20	3527.56	7:36:18	3530.56
900	549832.78	7:34:50	549827.00	7:35:48	549830.22	7:36:46	549830.00
Span							546299.44

Evaluator: \_\_\_\_\_

Fukuda

Remarks: \_\_\_\_\_

Date:	2012/2/22
Time:	7:26:10
Temperature:	20.3 °C
Relative humidity:	47.0 %
Barometric pressure:	102.12 kPa

**Measurement no. 4:**

Test load ( kg )	Run no.1		Run no.2		Run no.3		Average indication ( count )
	Indication ( count )	Time	Indication ( count )	Time	Indication ( count )	Time	
0	3534.89	13:17:38	3527.67	13:18:37	3522.00	13:19:35	3528.19
900	549842.33	13:18:07	549830.78	13:19:05	549844.44	13:20:03	549839.19
Span							546311.00

Evaluator: \_\_\_\_\_

Fukuda

Remarks: \_\_\_\_\_

Date:	2012/2/23
Time:	13:09:27
Temperature:	0.0 °C
Relative humidity:	0.0 %
Barometric pressure:	99.70 kPa

**Measurement no. 5:**

Test load ( kg )	Run no.1		Run no.2		Run no.3		Average indication ( count )
	Indication ( count )	Time	Indication ( count )	Time	Indication ( count )	Time	
0	3534.89	7:34:11	3529.56	7:35:10	3525.89	7:36:08	3530.11
900	549835.78	7:34:40	549837.78	7:35:38	549833.00	7:36:36	549835.52
Span							546305.41

Evaluator: \_\_\_\_\_

Fukuda

Remarks: \_\_\_\_\_

Date:	2012/2/24
Time:	7:25:59
Temperature:	20.3 °C
Relative humidity:	46.9 %
Barometric pressure:	101.13 kPa



**Form D.17.1.1(3 runs) Span stability-measurement data for classes C and D (continued)**

**Measurement no. 6:**

Test load (kg)	Run no.1		Run no.2		Run no.3		Average indication (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
0	3516.11	13:09:12	3505.33	13:10:10	3507.33	13:11:08	3509.59
900	549817.78	13:09:41	549811.89	13:10:39	549814.22	13:11:37	549814.63
Span							546305.04

Evaluator: Fukuda Remarks:

Date:	2012/2/27
Time:	13:01:30
Temperature:	20.3 °C
Relative humidity:	47.4 %
Barometric pressure:	101.39 kPa

**Measurement no. 7:**

Test load (g,kg or t)	Run no.1		Run no.2		Run no.3		Average indication (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
0	3511.22	7:44:01	3505.56	7:45:00	3506.56	7:45:58	3507.78
900	549810.56	7:44:30	549806.00	7:45:28	549801.78	7:46:26	549806.11
Span							546298.33

Evaluator: Fukuda Remarks:

Date:	2012/2/28
Time:	7:35:50
Temperature:	20.3 °C
Relative humidity:	47.2 %
Barometric pressure:	102.54 kPa

**Measurement no. 8:**

Test load (kg)	Run no.1		Run no.2		Run no.3		Average indication (count)
	Indication (count)	Time	Indication (count)	Time	Indication (count)	Time	
0	3504.89	7:25:43	3500.44	7:26:42	3495.00	7:27:40	3500.11
900	549815.67	7:26:12	549802.11	7:27:10	549807.89	7:28:08	549808.56
Span							546308.44

Evaluator: Fukuda Remarks:

Date:	2012/2/29
Time:	7:17:32
Temperature:	20.3 °C
Relative humidity:	47.1 %
Barometric pressure:	102.41 kPa

**Form D.17.2 Span stability-summary of test results**

Ref.: 6.3.2;A.4.7.8;D.17.1.1(3runs)

Application no.: 24-003  
 Load cell model: LB-XD-1T-HCS  
 Serial no.: 22T0810901  
 $E_{max}$ : 1000 kg  
 $\eta_{max}$ : 3000  
 $V_{min}$ : 0.125 kg  
 $P_{LC}$ : 1.0 DR: —  
 Force-generating system: Load cell performance testing device  
 Indicating instrument: KS-C7200  
 Evaluator: Fukuda

**Table D.17.2**

Measurement no. (see Note 3)	Span		Variation (v)	Maximum allowable variation(v)
	( count )	(v)		
1	546288.59	2999.99	0.00	
2	546306.81	3000.09	0.10	0.75
3	546299.44	3000.05	0.06	0.75
4	546311.00	3000.12	0.12	0.75
5	546305.41	3000.09	0.09	0.75
6	546305.04	3000.08	0.09	0.75
7	546298.33	3000.05	0.05	0.75
8	546308.44	3000.10	0.11	0.75

PASS:  x  FAIL:

Remarks:

- Notes:
- 1 Variation: the difference in the span value from the span value of run no.1.
  - 2 Maximum allowable variation: half the load cell verification interval or half the absolute value of the maximum test load applied.
  - 3 Use the results from measurements nos. 1-8 on Form D17.1.1(3 runs) or From D17.1.