



OIML Member State  
Japan

OIML Certificate N°  
R76/1992-JP1-12.01

## 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: A&D Company, Limited  
Address: 3-23-14 Higashi-ikebukuro, Toshima-ku, Tokyo 170-0013, JAPAN

### Manufacturer of the certified type

Name: A&D SCALES CO.,LTD  
Address: 162-4 INSAN-NI,DEOGSAN-MYEON,JINCHEON-GUN,  
CHUNGCHONGBUG-DO,KOREA

### Identification of the certified type

Non-automatic weighing instruments  
Type: SC/SE series  
Further characteristics see page 3

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

**R76-1**, Edition 1992, including amendment 1 (1994),  
for accuracy class: **III**

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.



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

Evaluation Report N° 24-01( Test Report N° 11-02/R76:1992 that includes 58 pages.)

The Issuing Authority

NMIJ/AIST



Dr. T. Nomakuchi

President of AIST

2012-03-09

The OIML Member

Dr. Y. Miki

2012-03-09



OIML Member State  
Japan

OIML Certificate N°  
R76/1992-JP1-12.01

Characteristics:

Type	SC-30KAM SC-30KBM SE-30KAM SE-30KBM	SC-60KAM SC-60KBM SC-60KAL SC-60KBL SE-60KAM SE-60KBM SE-60KAL SE-60KBL	SC-150KAM SC-150KBM SC-150KAL SC-150KBL SE-150KAM SE-150KBM SE-150KAL SE-150KBL
Class	III		
Max	30 kg	60 kg	150 kg
e	10 g	20 g	50 g
n	3000		
Min	200 g	400 g	1 kg
Tare-balancing range	≤ 100 % of Max		
Temperature range	-10 °C / +40 °C		
Power supply	Dry battery		

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 Evaluation Report is not permitted, although either may be reproduced in full.



# Evaluation Report

Non-automatic weighing instruments

**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 : A&D Company, Limited

Manufacturer : A&D SCALES CO.,LTD

Applied Type : SC/SE series

Evaluation Report Number : 24-01

This report ensures the conformity of the applied type with the requirements of the OIML R76-1(edition 1992), including Amendment 1(1994), on the basis of evaluation of the attached test report (N° 11-02 / R76 :1992 ).

**Evaluator :**

Masaki Shimada  
Legal Metrology Division  
NMIJ/AIST

Signature :

Date: 2012. 3. 01

**Supervisor :**

Shigeki Yamaguchi  
Head of Legal Metrology Division  
NMIJ/AIST

Signature :

Date: 2012. 3. 01

## Description

### Technical data

Type	SC-30KAM SC-30KBM SE-30KAM SE-30KBM	SC-60KAM SC-60KBM SC-60KAL SC-60KBL SE-60KAM SE-60KBM SE-60KAL SE-60KBL	SC-150KAM SC-150KBM SC-150KAL SC-150KBL SE-150KAM SE-150KBM SE-150KAL SE-150KBL
Class	III		
Max	30 kg	60 kg	150 kg
e	10 g	20 g	50 g
n	3000		
Min	200 g	400 g	1 kg
Tara-balancing rang	$\leq 100\%$ of Max		
Temperature range	-10 °C / +40 °C		
Power supply	Dry battery		

### Interfaces

One or several of the following interfaces may be incorporated:

- Serial data interface RS232 (to connect Printer)
- USB interface (to connect Personal computer)

### Devices that may be connected

For applications subject to mandatory verification:

-Additional devices (e.g. printer) as suitable for connection to weighing instruments.

For applications not subject to mandatory verification, any peripheral devices may be connected.

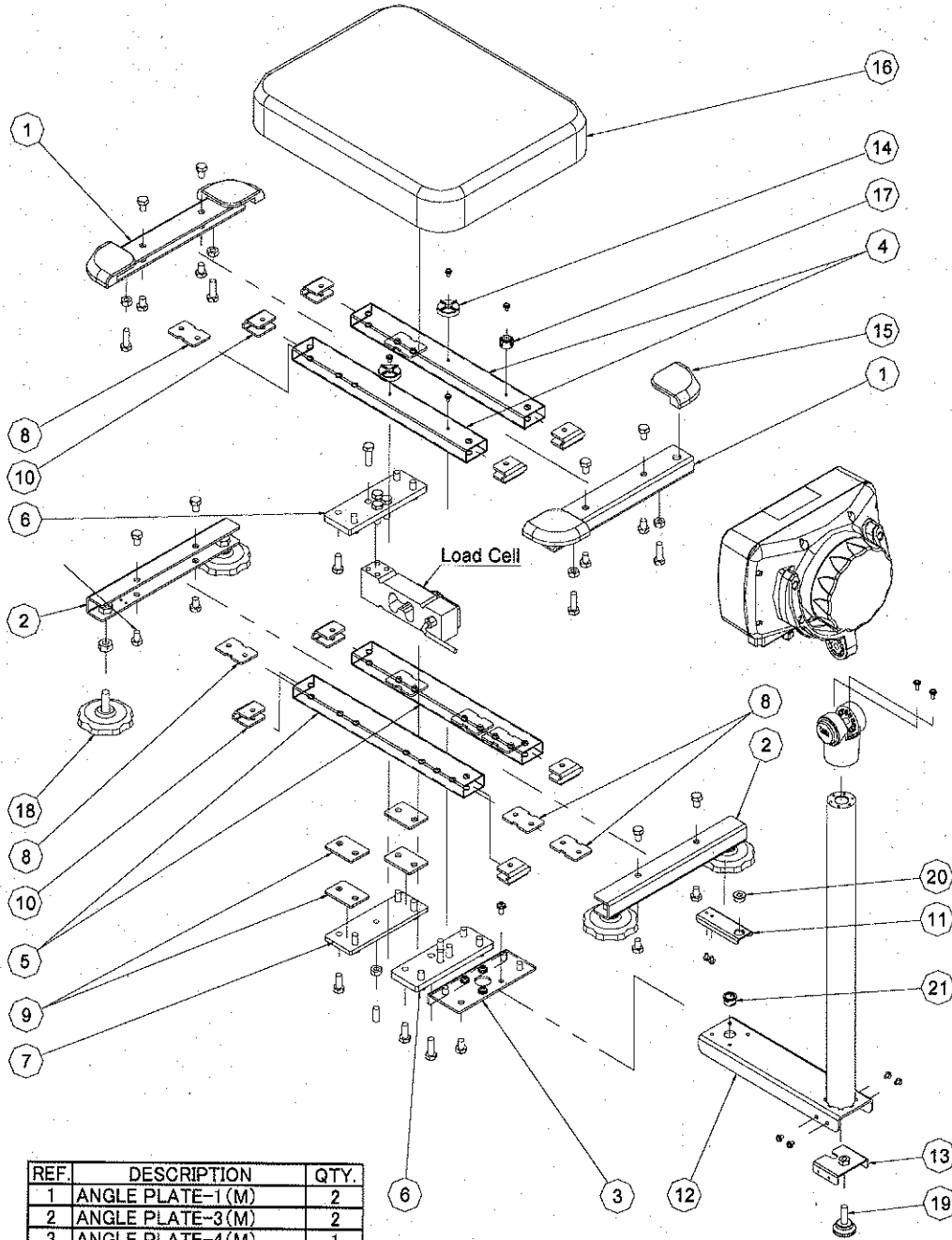
### Securing locations

If securing (sealing) is required, instruments can be protected by wire locked screws at the locations on the page 23.

Drawing Name	Drawing Number
Exploded view	SCSE - 001 ~ 009
Descriptive Marking Sticker	SCSE - 010
Display Sheet	SCSE - 011
Block chart	SCSE - 012
Circuit Diagram	SCSE - 013 ~ 016
Board Layout	SCSE - 017 ~ 020
Sealing	SCSE - 021
Dimension	SCSE - 022 ~ 025
Load cell	SCSE - 026

# Exploded view

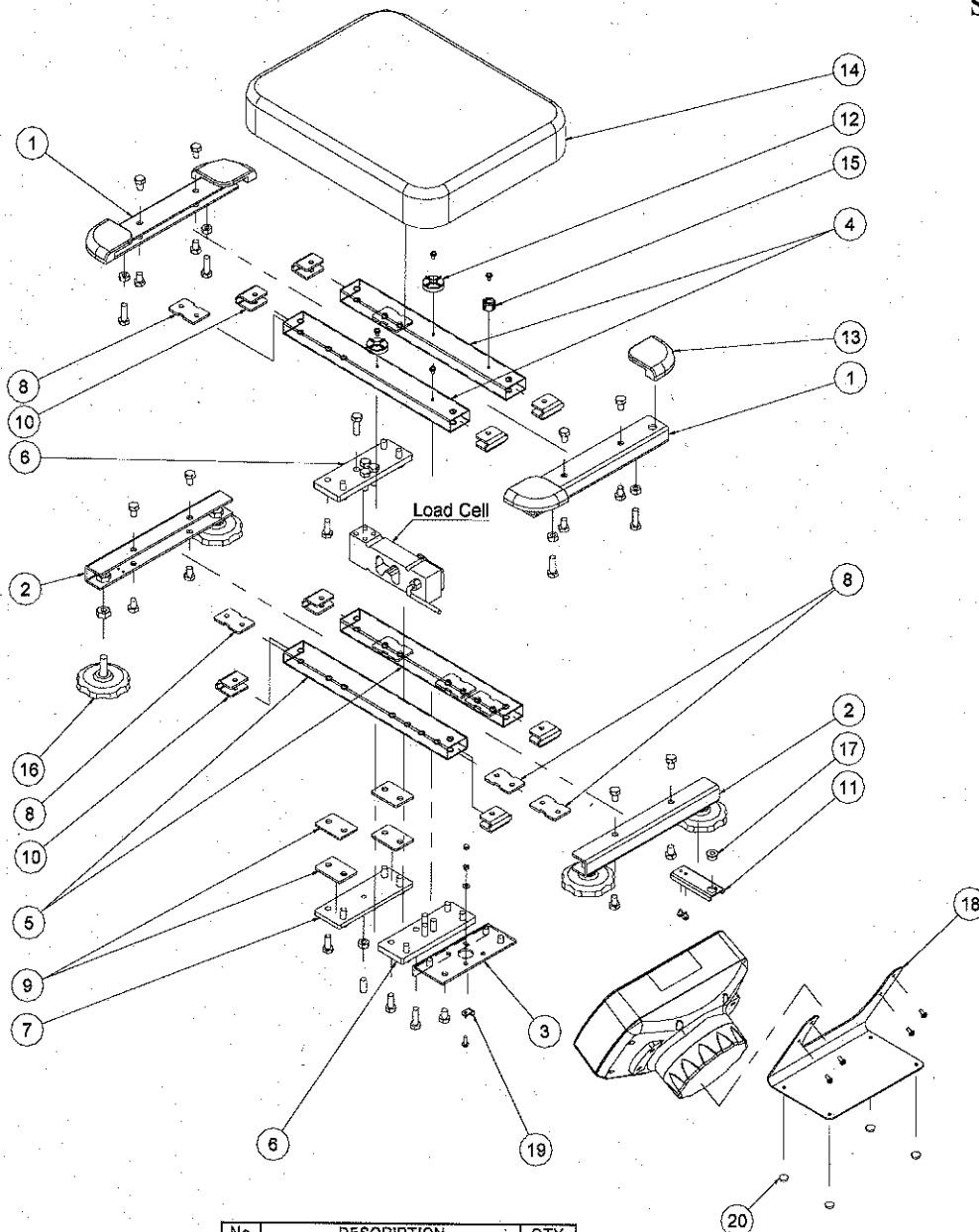
SC-\*\*\*KAM Series



REF.	DESCRIPTION	QTY.
1	ANGLE PLATE-1(M)	2
2	ANGLE PLATE-3(M)	2
3	ANGLE PLATE-4(M)	1
4	RECTANGLE PIPE-2(M)	2
5	RECTANGLE PIPE-3(M)	2
6	FLAT BAR-1(M)	2
7	FLAT BAR-2(M)	1
8	M8 NUT PLATE(M)	8
9	SPACER t3	4
10	PIPE END PLATE	8
11	LEVEL VIAL PLATE	1
12	POLE BRACKET	1
13	FOOT HOLDER PLATE	1
14	CENTER PAD	2
15	CORNER PAD	4
16	PAN-SUS304	1
17	CARBON CAP	1
18	LEVEL FOOT	4
19	LEVEL FOOT	1
20	LEVEL VIAL	1
21	CABLE BUSH	1

# Exploded view

SC-\*\*\*KBM Series

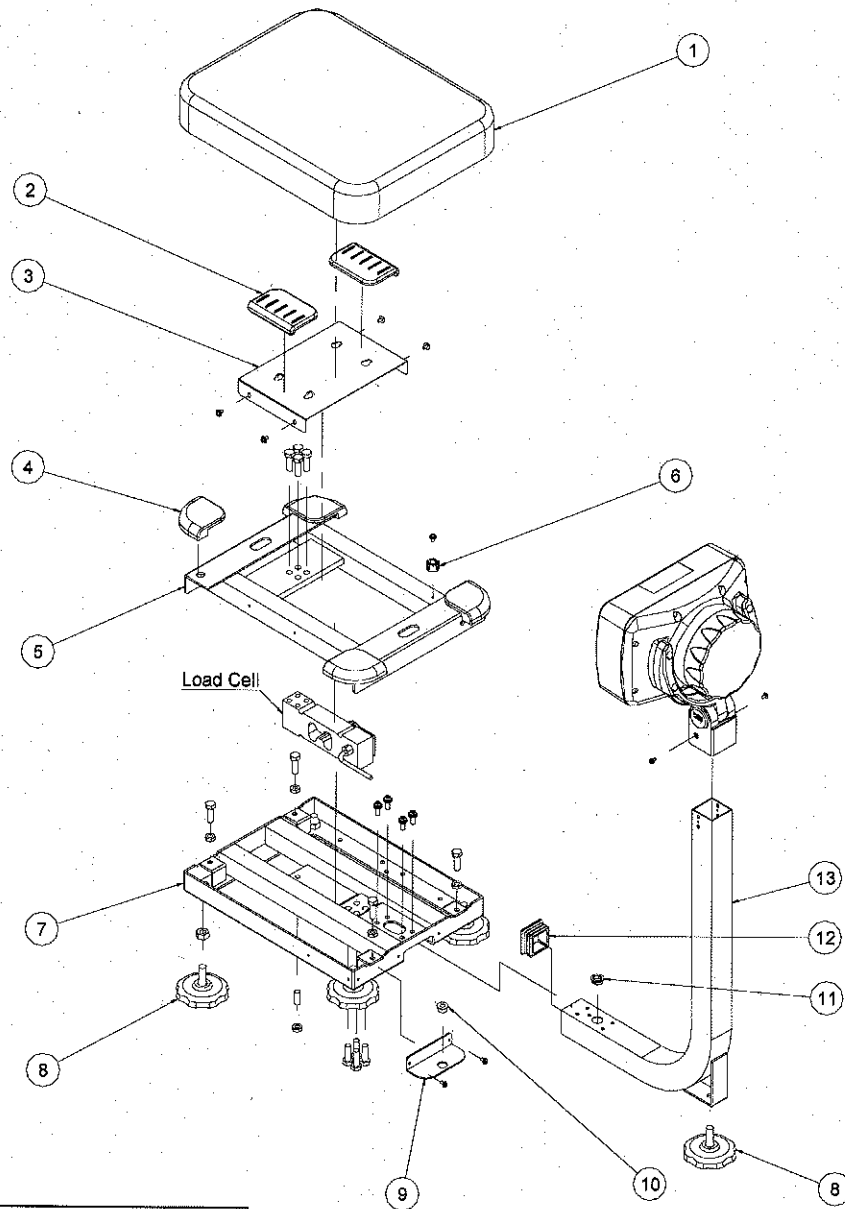


No.	DESCRIPTION	QTY.
1	ANGLE PLATE-1 (M)	2
2	ANGLE PLATE-3 (M)	2
3	ANGLE PLATE-4 (M)	1
4	RECTANGLE PIPE-2 (M)	2
5	RECTANGLE PIPE-3 (M)	2
6	FLAT BAR-1 (M)	2
7	FLAT BAR-2 (M)	1
8	M8 NUT PLATE (M)	8
9	SPACER t3	4
10	PIPE END PLATE	8
11	LEVEL VIAL PLATE	1
12	CENTER PAD	2
13	CORNER PAD	4
14	PAN-SUS304	1
15	CARBON GAP	1
16	LEVEL FOOT	4
17	LEVEL VIAL	1
18	TABLE STAND	1
19	NYLON CLAMP	1
20	BUMPON SJ-5012 BK	4



# Exploded view

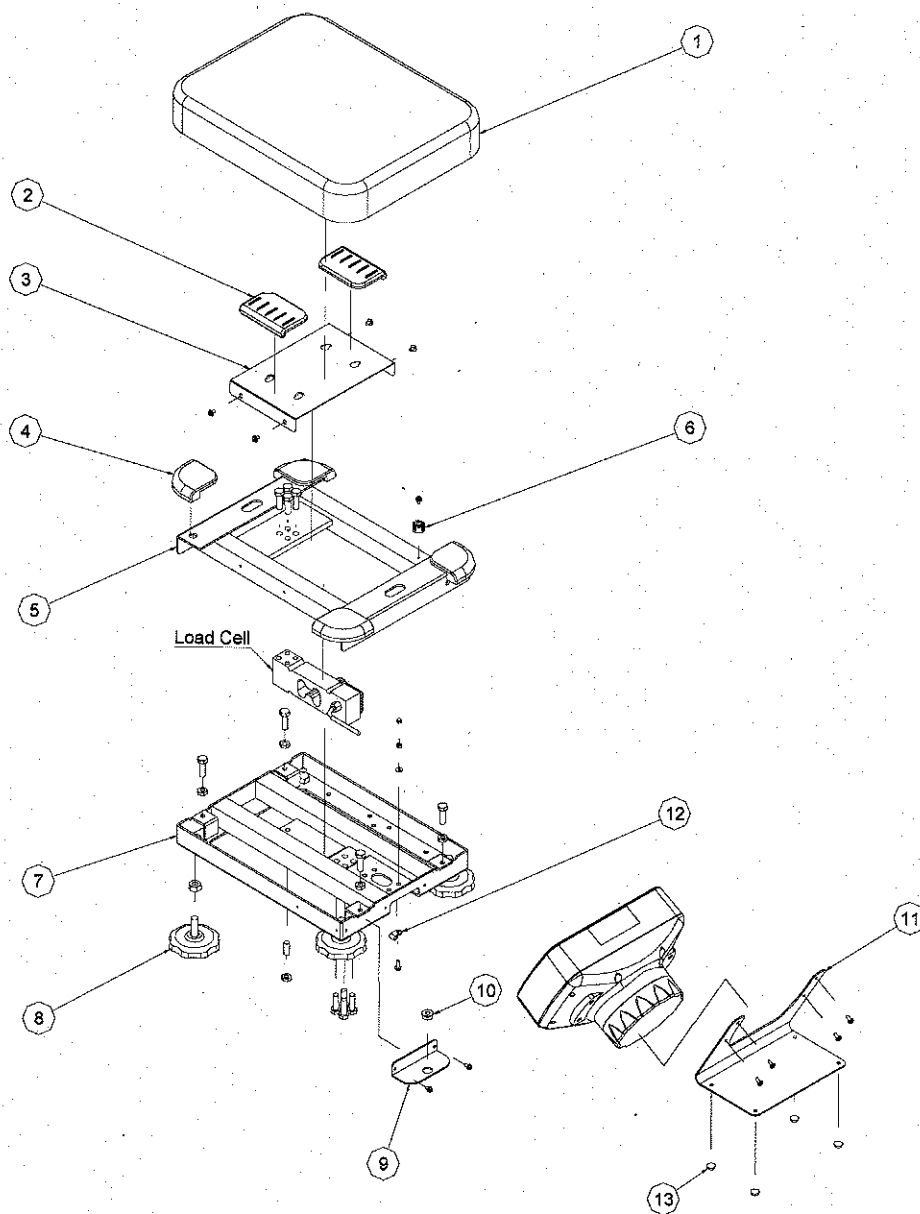
SE-\*\*\*KAM Series



REF.	DESCRIPTION	QTY.
1	PAN-SUS430	1
2	CENTER PAD	2
3	COVER (M)	1
4	CORNER PAD	4
5	UPPER FRAME (M)	1
6	CARBON CAP	1
7	UNDER FRAME (M)	1
8	LEVEL FOOT	5
9	LEVEL VIAL PLATE	1
10	LEVEL VIAL	1
11	CABLE BUSH	1
12	CAP 40x40	1
13	SE POLE-M	1

# Exploded view

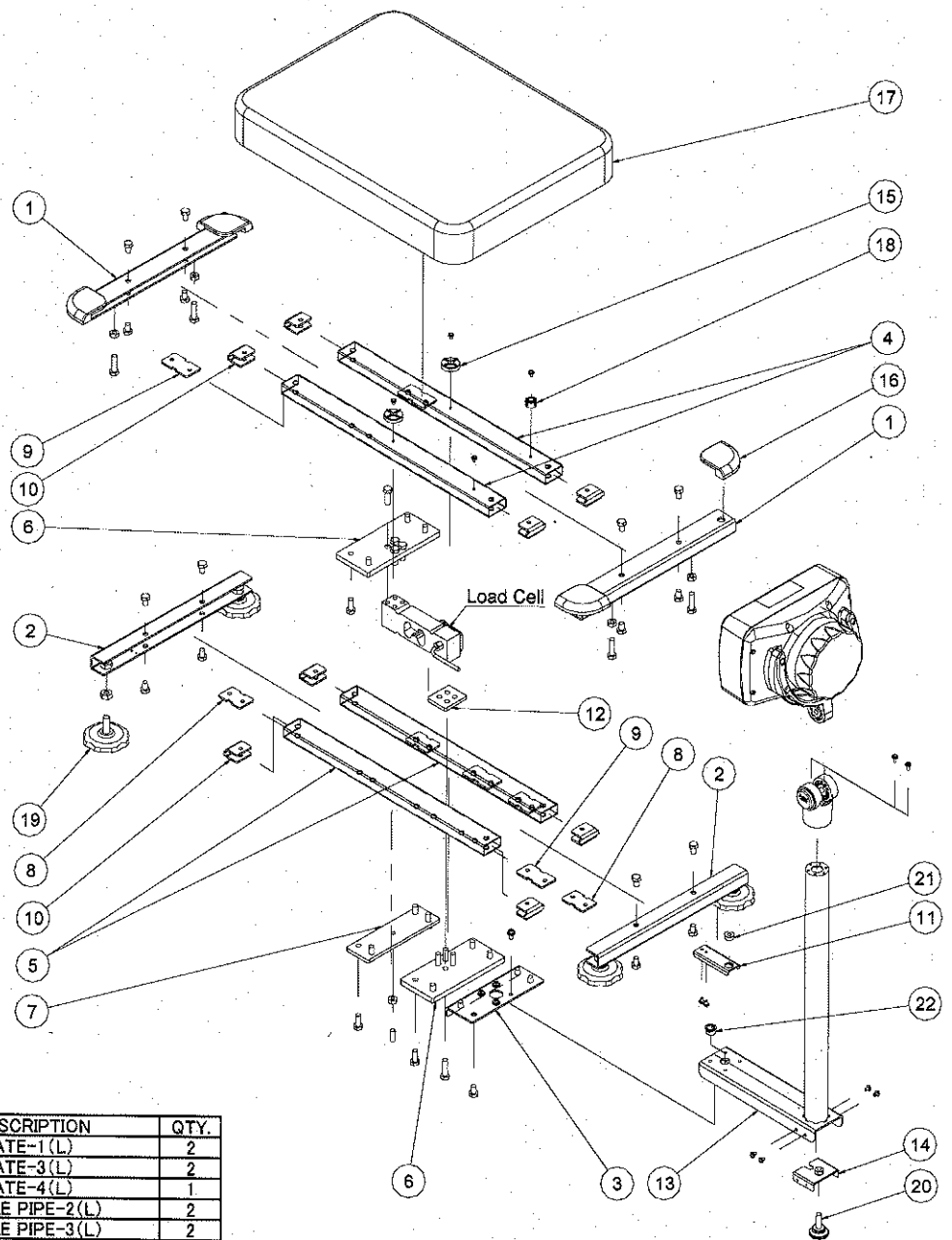
SE-\*\*\*KBM Series



No.	DESCRIPTION	QTY.
1	PAN-SUS430	1
2	CENTER PAD	2
3	COVER(M)	1
4	CORNER PAD	4
5	UPPER FRAME (M)	1
6	CARBON CAP	1
7	UNDER FRAME (M)	1
8	LEVEL FOOT	5
9	LEVEL PLATE	1
10	LEVEL VIAL	1
11	TABLE STAND	1
12	NYLON CLAMP	1
13	BUMPON SJ-5012 BK	4

# Exploded view

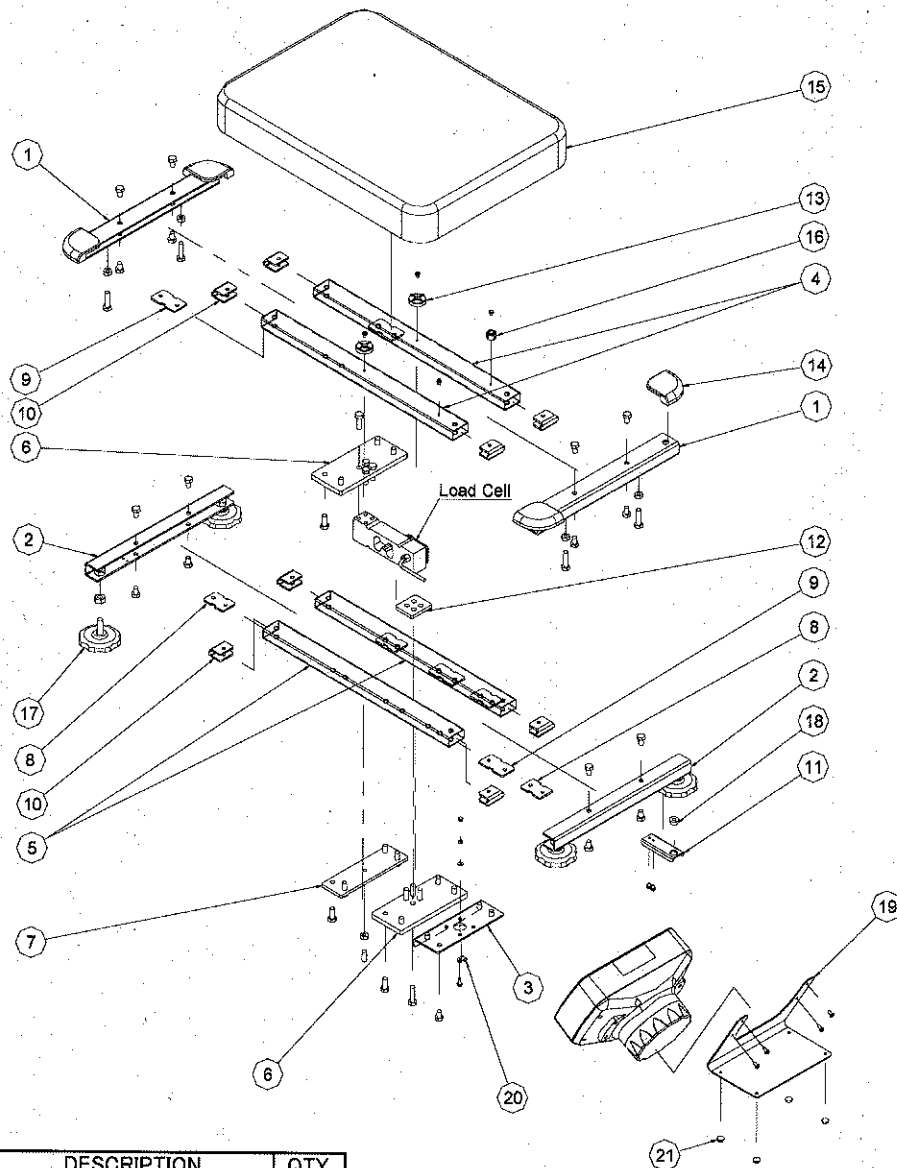
SC-\*\*\*KAL Series



REF.	DESCRIPTION	QTY.
1	ANGLE PLATE-1(L)	2
2	ANGLE PLATE-3(L)	2
3	ANGLE PLATE-4(L)	1
4	RECTANGLE PIPE-2(L)	2
5	RECTANGLE PIPE-3(L)	2
6	FLAT BAR-1(L)	2
7	FLAT BAR-2(L)	1
8	M8 NUT PLATE(M)	4
9	M8 NUT PLATE(L)	4
10	PIPE END PLATE	8
11	LEVEL VIAL PLATE	1
12	LC SPACER	1
13	POLE BRACKET	1
14	FOOT HOLDER PLATE	1
15	CENTER PAD	2
16	CORNER PAD	4
17	PAN(L)	1
18	CARBON CAP	1
19	LEVEL FOOT	4
20	LEVEL FOOT	1
21	LEVEL VIAL	1
22	CABLE BUSH	1

# Exploded view

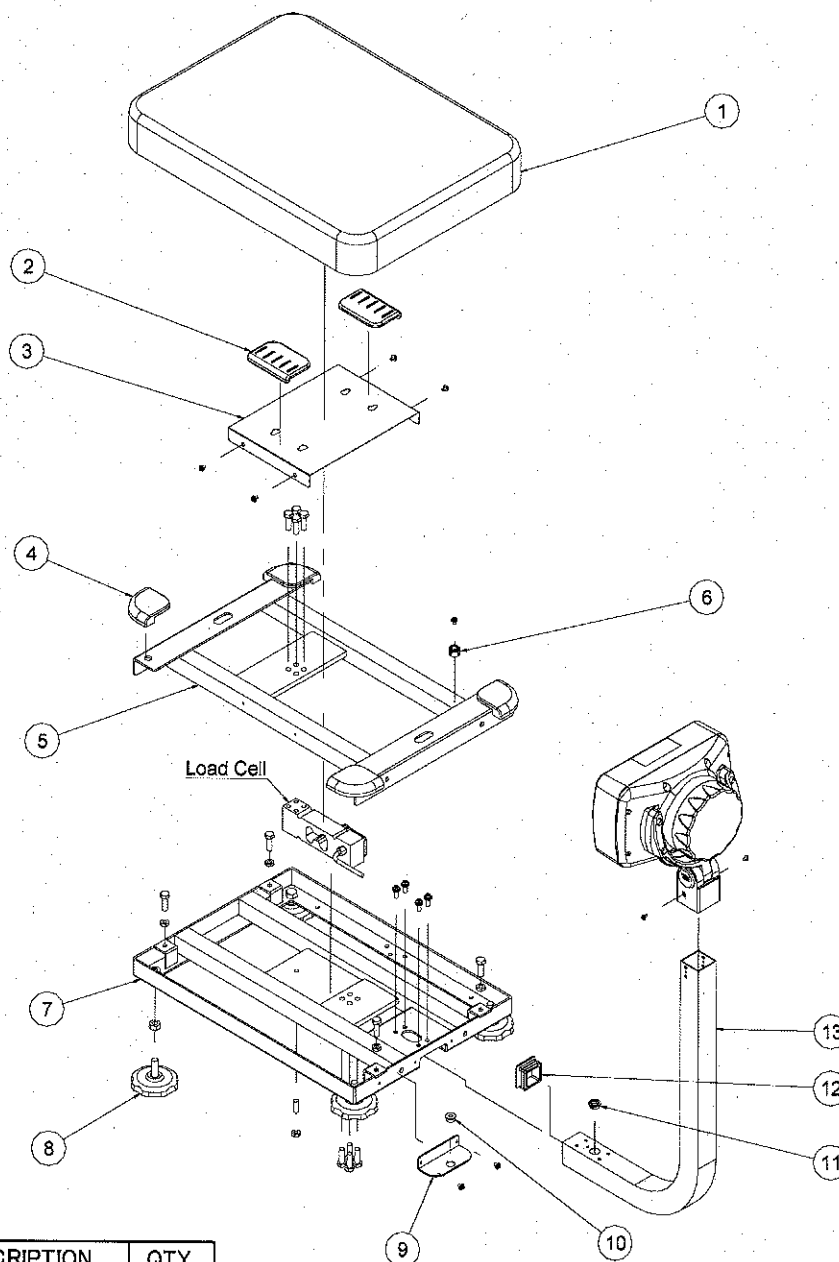
SC-\*\*\*KBL Series



No.	DESCRIPTION	QTY.
1	ANGLE PLATE-1(L)	2
2	ANGLE PLATE-3(L)	2
3	ANGLE PLATE-4(L)	1
4	RECTANGLE PIPE-2(L)	2
5	RECTANGLE PIPE-3(L)	2
6	FLAT BAR-1(L)	2
7	FLAT BAR-2(L)	1
8	M8 NUT PLATE (M)	4
9	M8 NUT PLATE (L)	4
10	PIPE END PLATE	8
11	LEVEL VIAL PLATE	1
12	LC SPACER	1
13	CENTER PAD	2
14	CORNER PAD	4
15	PAN(L)	1
16	CARBON CAP	1
17	LEVEL FOOT	4
18	LEVEL VIAL	1
19	TABLE STAND	1
20	NYLON CLAMP	1
21	BUMPON SJ-5012 BK	4

# Exploded view

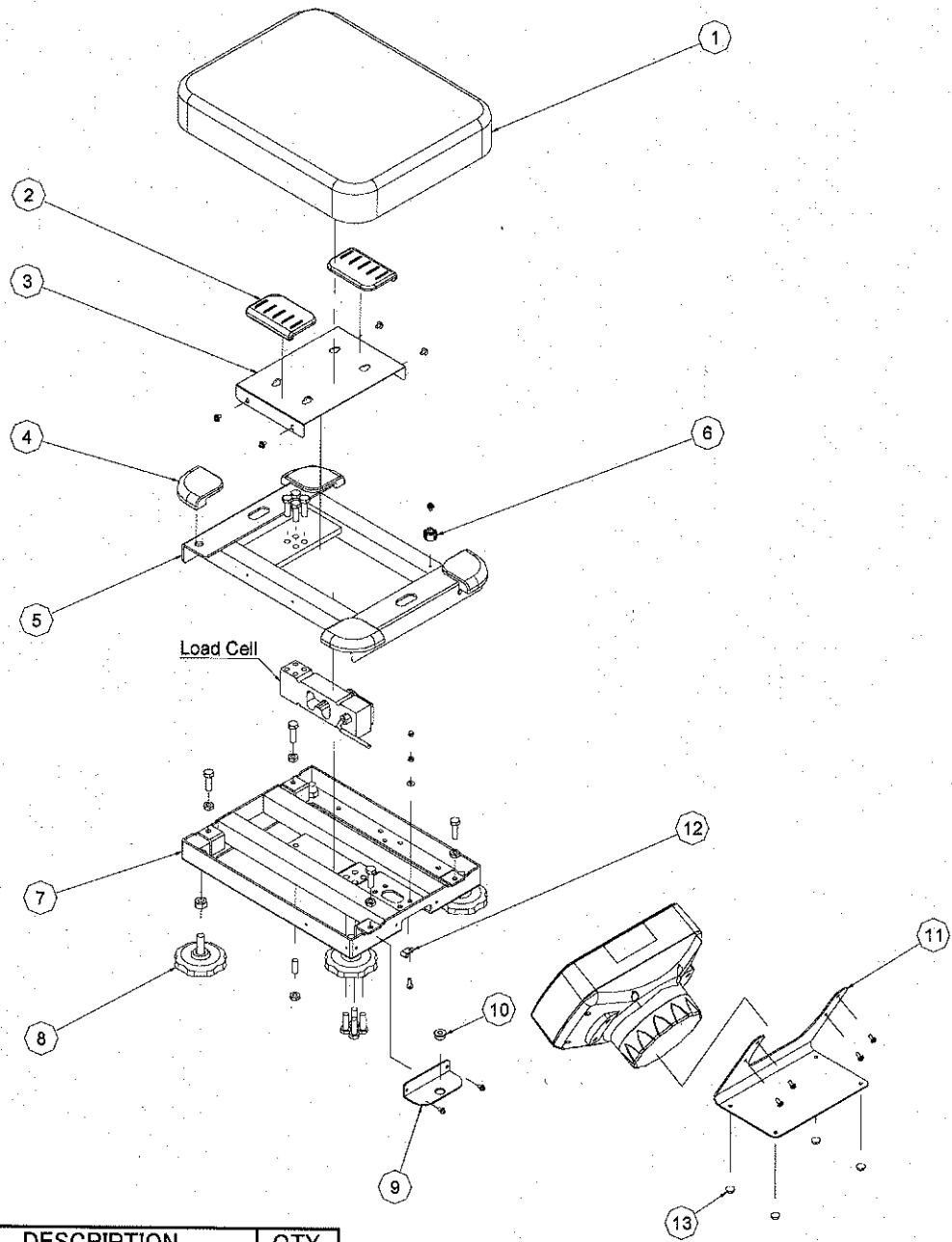
SE-\*\*\*KAL Series



RFE.	DESCRIPTION	QTY.
1	PAN(L)	1
2	CENTER PAD	2
3	COVER(L)	1
4	CORNER PAD	4
5	UPPER FRAME(L)	1
6	CARBON CAP	1
7	UNDER FRAME(L)	1
8	LEVEL FOOT	4
9	LEVEL VIAL PLATE	1
10	LEVEL VIAL	1
11	CABLE BUSH	1
12	CAP 40x40	1
13	SE POLE-L	1

# Exploded view

SE-\*\*\*KBL Series

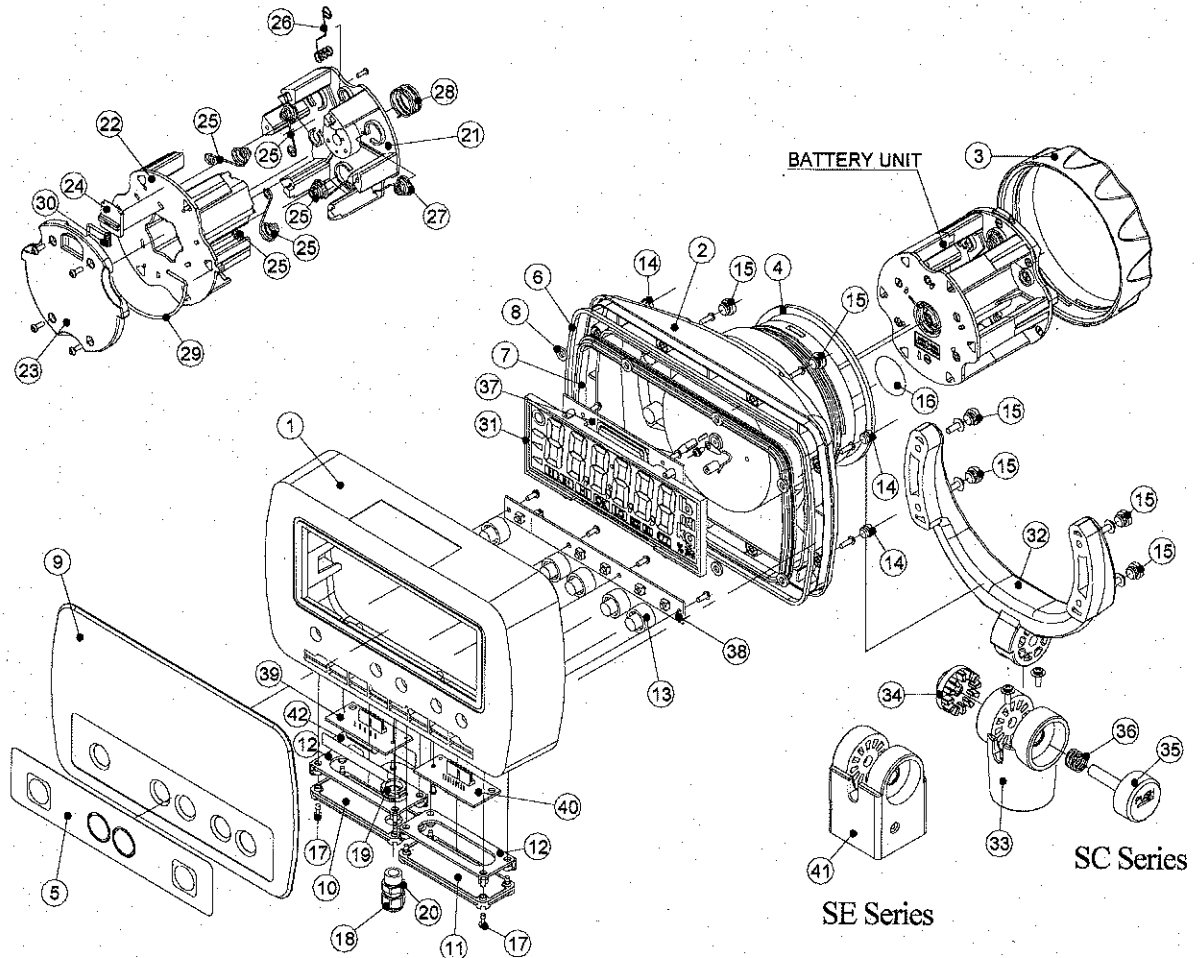


No.	DESCRIPTION	QTY.
1	PAN-SUS430	1
2	CENTER PAD	2
3	COVER (M)	1
4	CORNER PAD	4
5	UPPER FRAME (M)	1
6	CARBON CAP	1
7	UNDER FRAME (M)	1
8	LEVEL FOOT	5
9	LEVEL PLATE	1
10	LEVEL VIAL	1
11	TABLE STAND	1
12	NYLON CLAMP	1
13	BUMPON SJ-5012 BK	4

# Exploded view

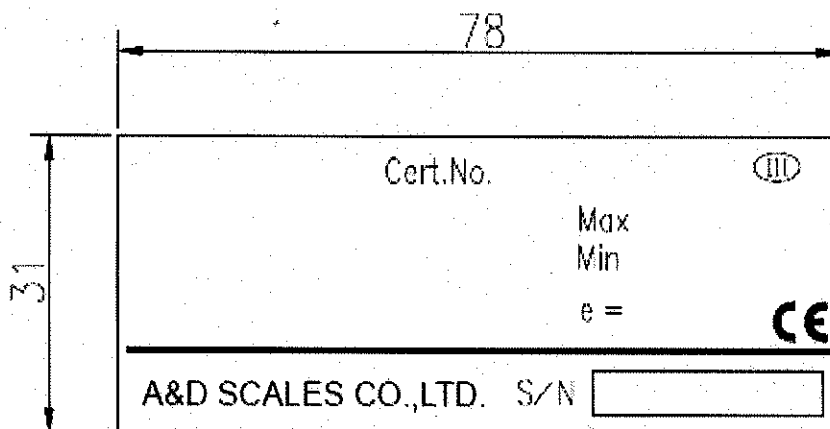
SC/SE Indicator

## BATTERY UNIT Details



REF.	DESCRIPTION	QTY.	REF.	DESCRIPTION	QTY.	REF.	DESCRIPTION	QTY.
1	UPPER CASE	1	16	BLANK SEAL-B	1	31	LCD HOLDER	1
2	LOWER CASE	1	17	PANEL SCREW M3X8	8	32	BRACKET ARM	1
3	CAP	1	18	SKINTOP M12	1	33	BRACKET BOTTOM	1
4	CAP PACKING	1	19	SKINTOP M12 NUT	1	34	LOCK DISK	1
5	KEY SHEET	1	20	SKINTOP M12 RING	1	35	NOB BOLT	1
6	MAIN PACKING	1	21	BATTERY FRAME TP	1	36	LOCK SPRING	1
7	SUB PACKING	1	22	BATTERY FRAME BT	1	37	MAIN BOARD	1
8	BOSS PAD	8	23	BOTTOM PLATE	1	38	KEY BOARD	1
9	FILTER	1	24	LOCK	1	39	LC JUNCTION BOARD	1
10	CELL PANEL	1	25	electrode PM	5	40	OP JUNCTION BOARD	1
11	OP PANEL	1	26	electrode P	1	41	BRACKET BOTTOM SE	1
12	PANEL PACKING	2	27	electrode M	1	42	SHIELD COVER	1
13	KEY CAP	5	28	electrode CAP	1			
14	PLUG S	4	29	HANDLE	1			
15	PLUG L	8	30	STAY SPRING	1			

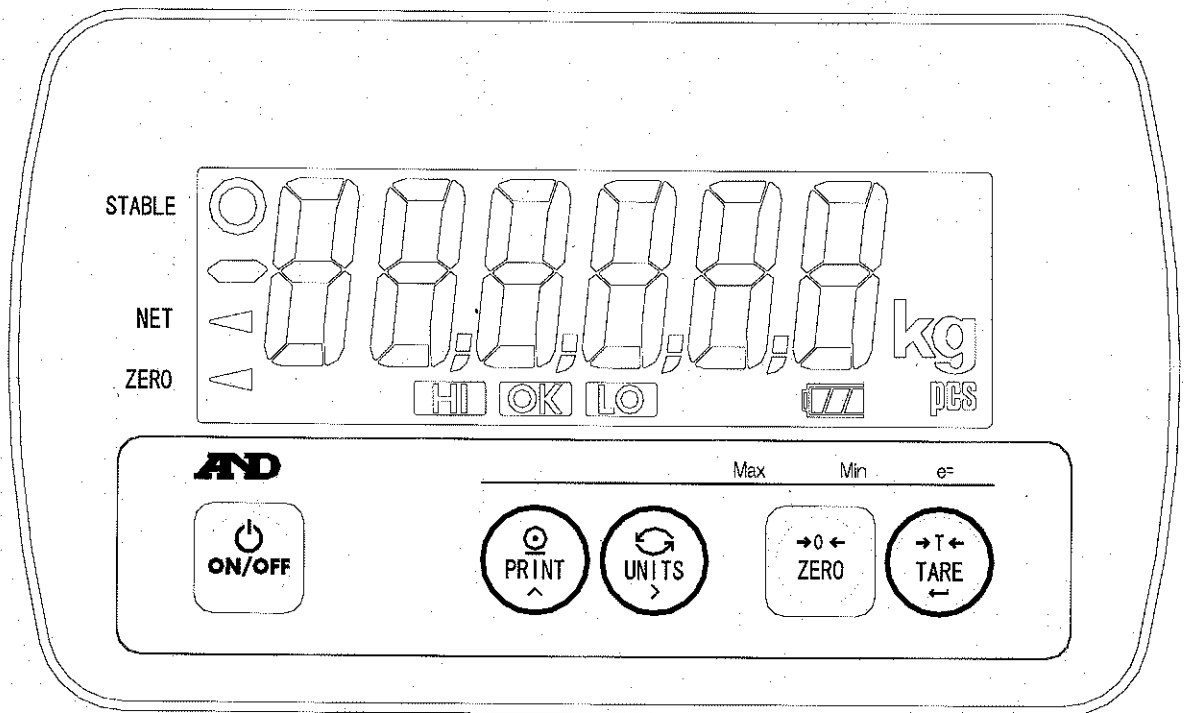
## Descriptive Marking Sticker



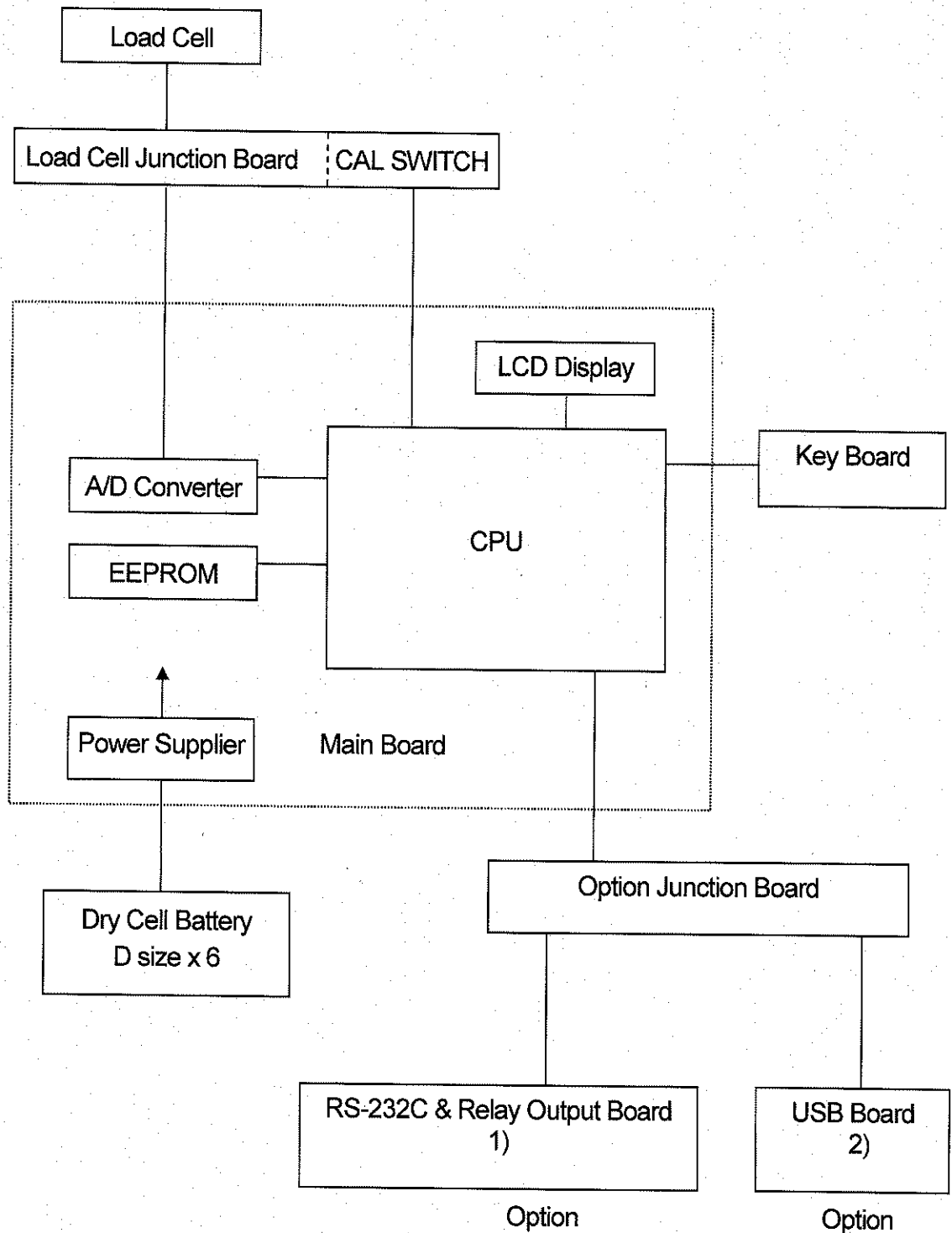
Unit : mm



# Display Sheet



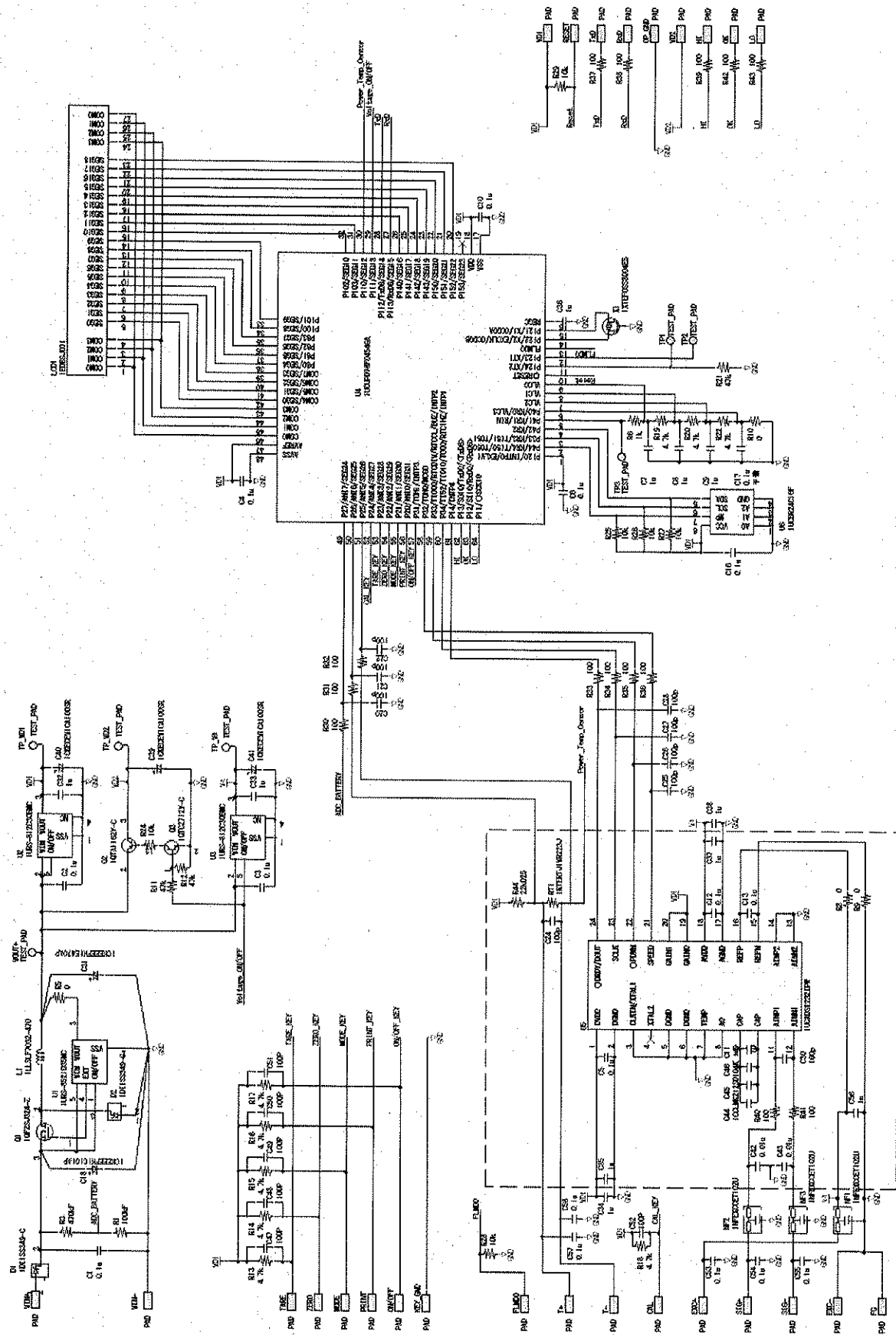
### Block chart



One of 1) or 2) can be connected.

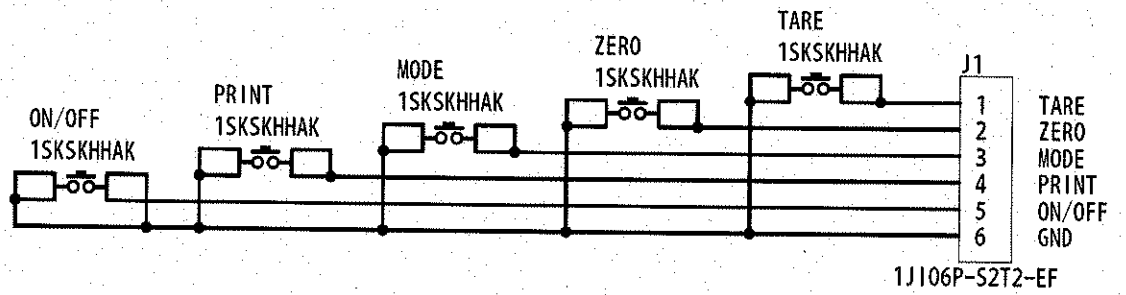
# Circuit Diagram

## Main Board



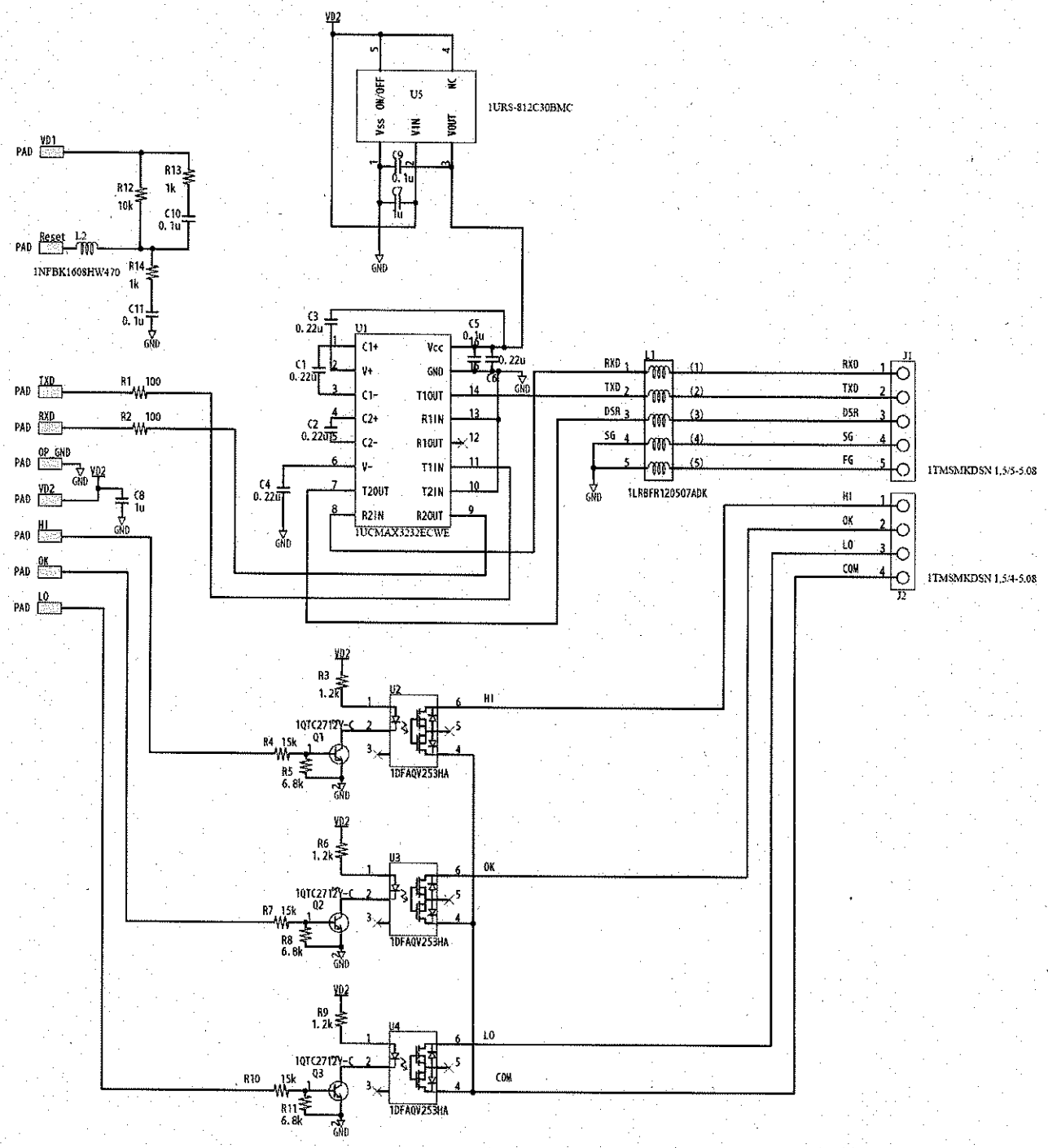
# Circuit Diagram

Key Board



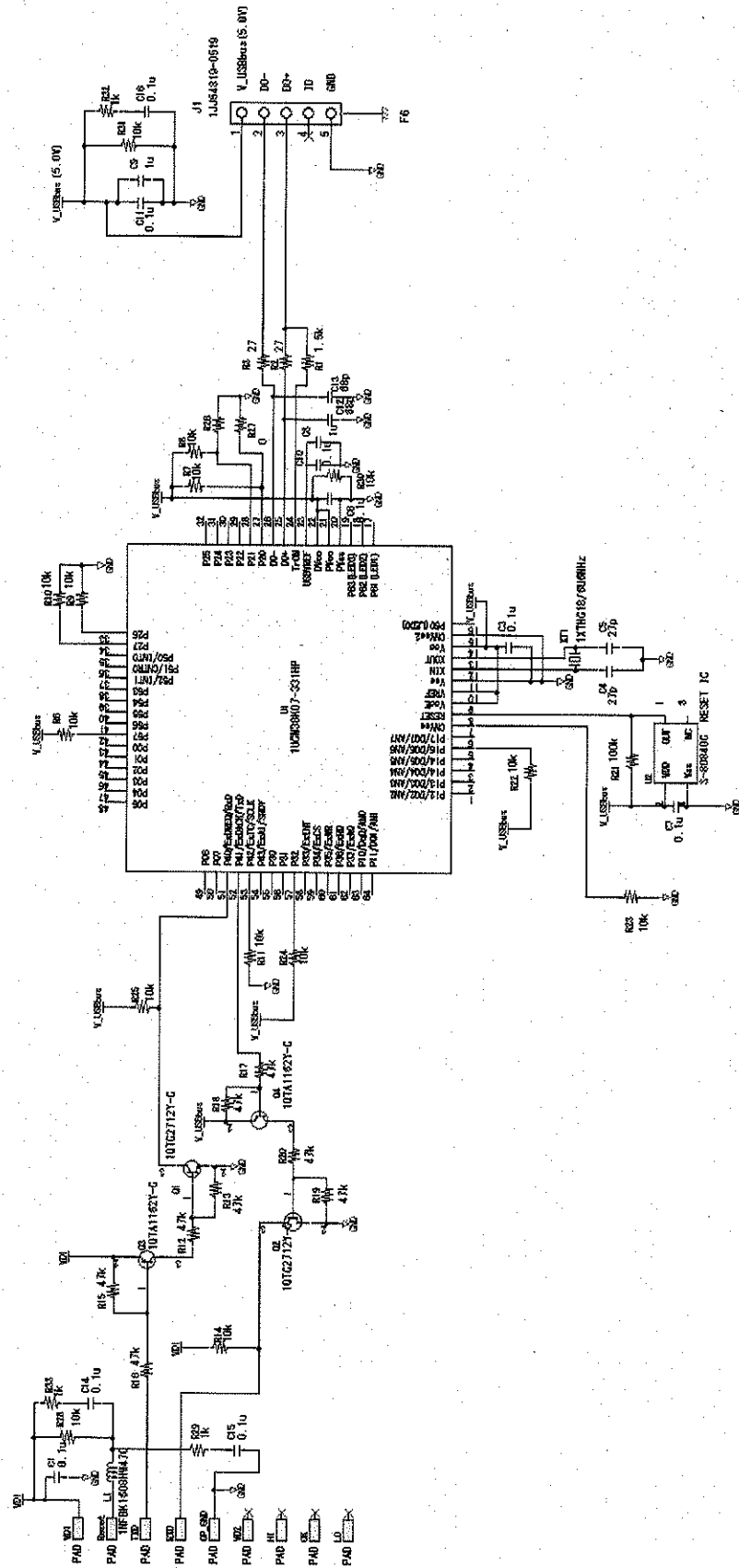
# Circuit Diagram

## RS-232C & Relay Output Board



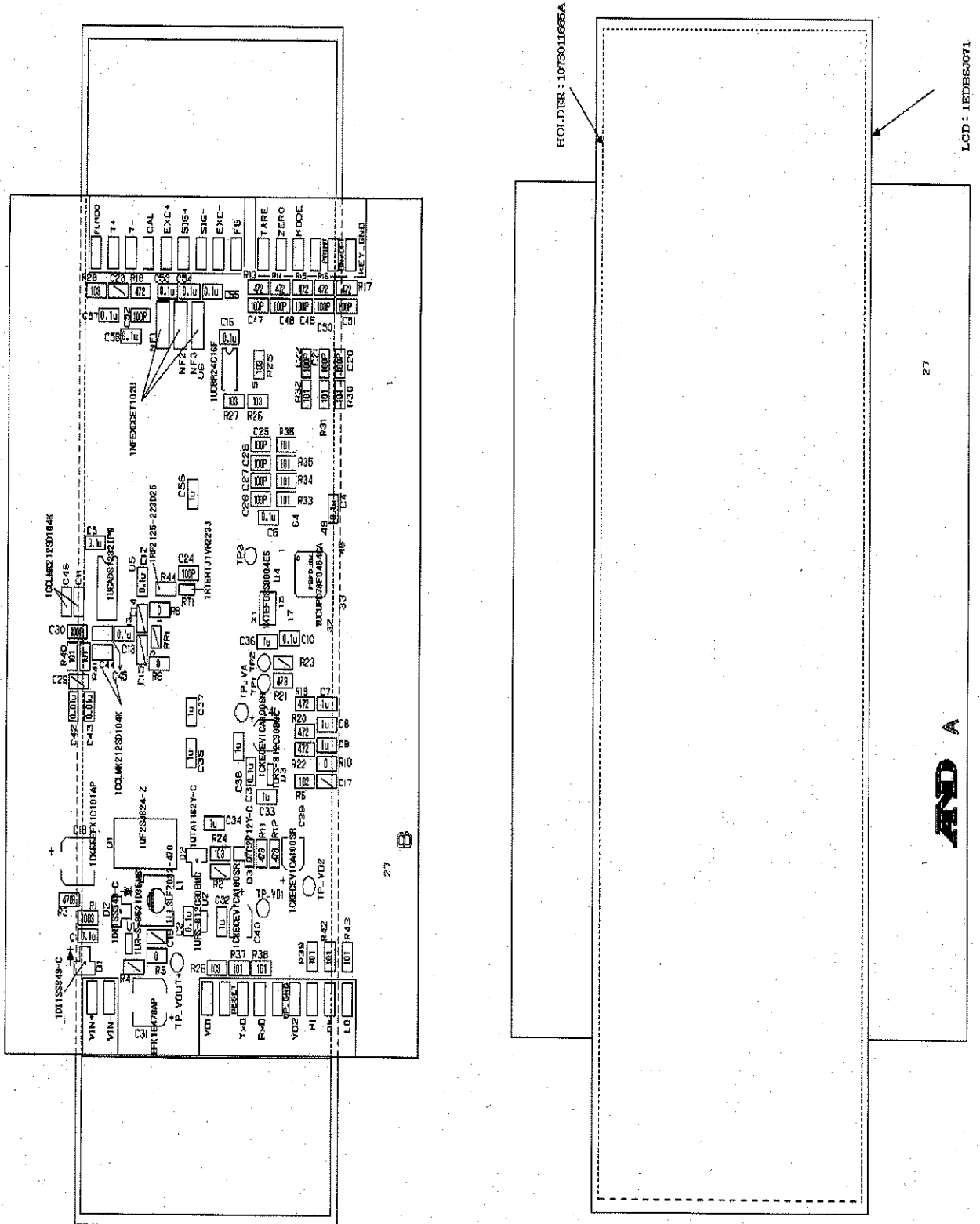
# Circuit Diagram

## USB Board



# Board Layout

Main Board



HOLDER : 1073011665A

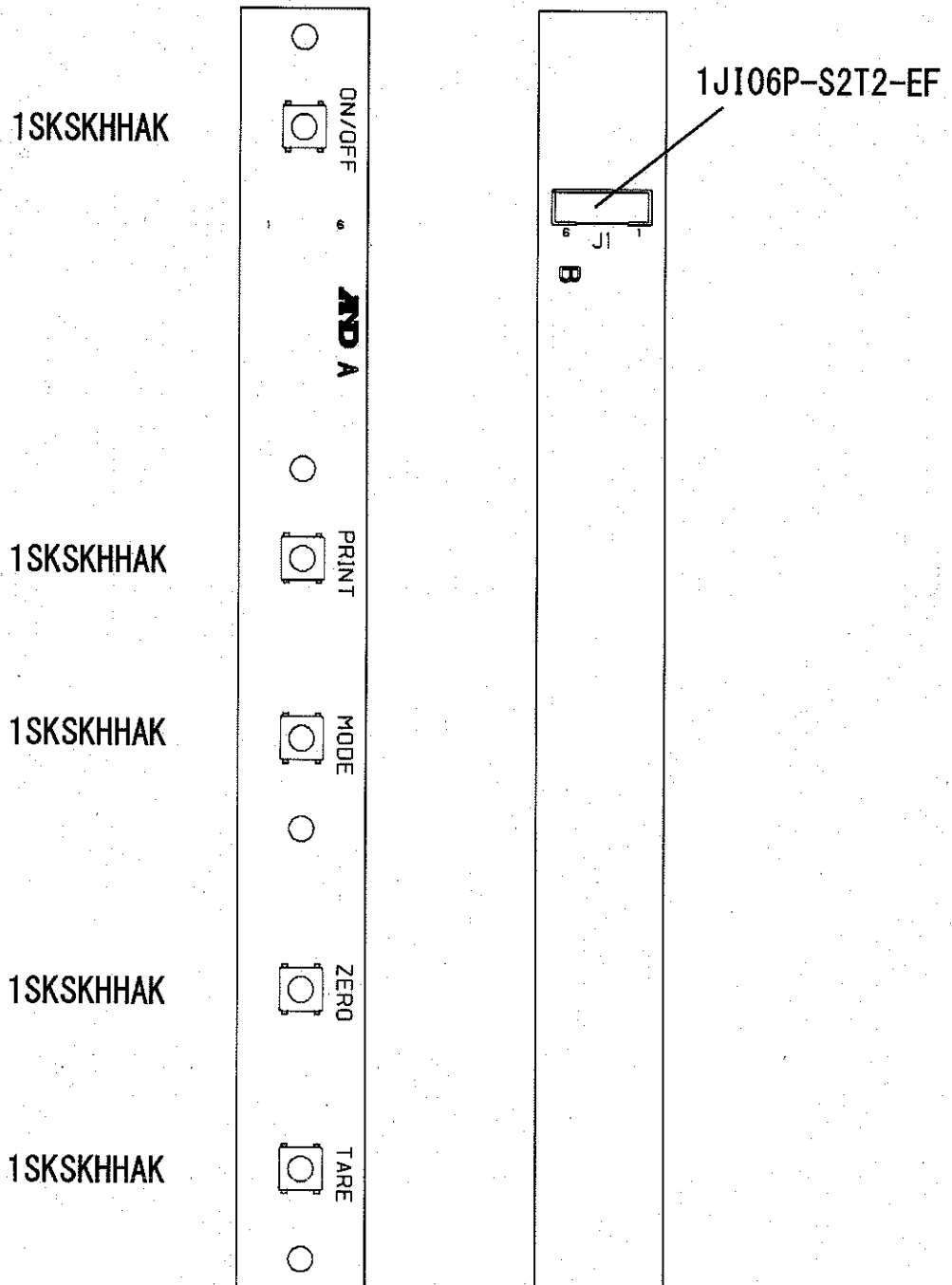
LCD : 1EDBS0071

27

**AND A**

# Board Layout

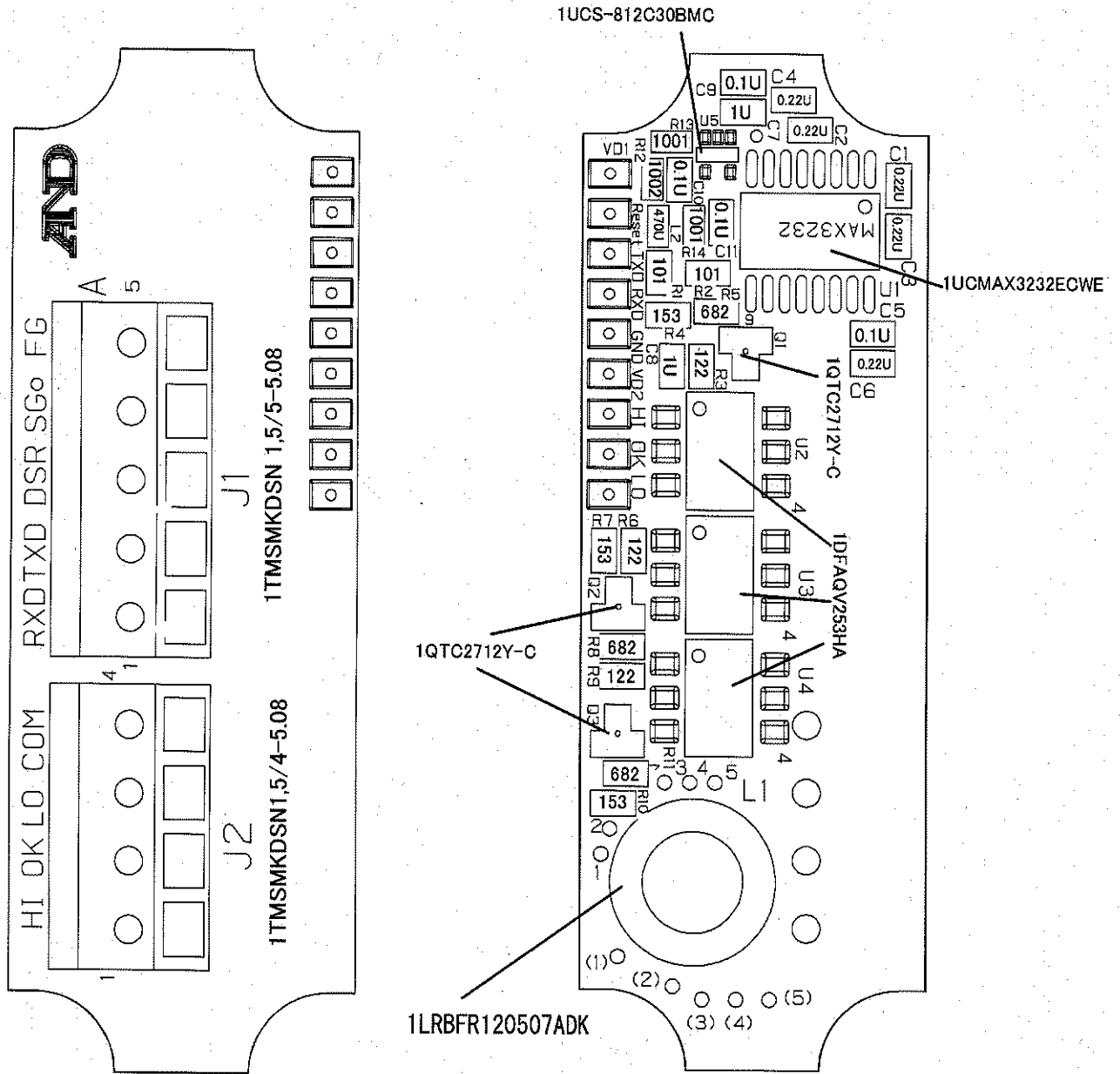
Key Board





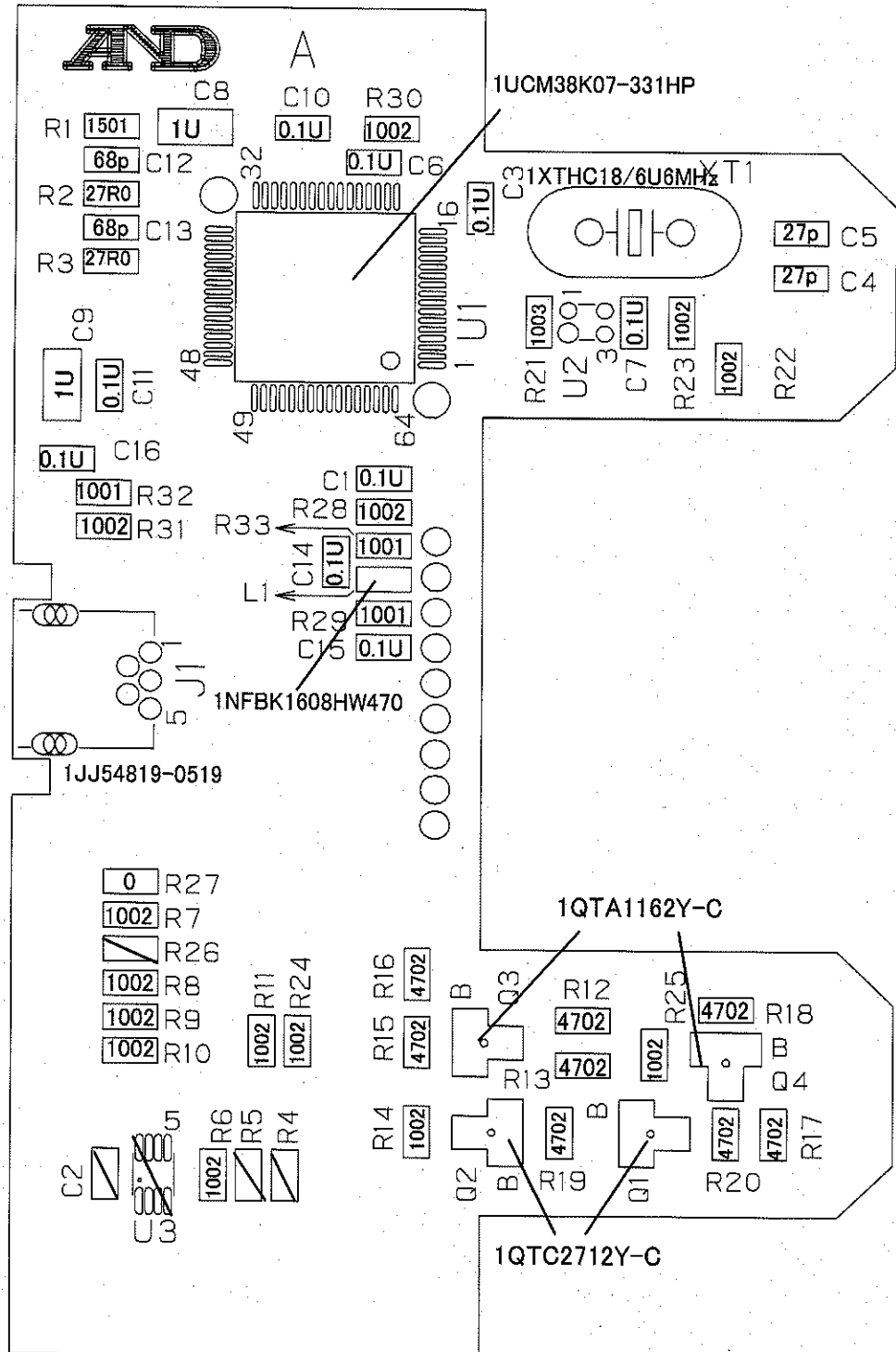
# Board Layout

RS-232C & Relay Output

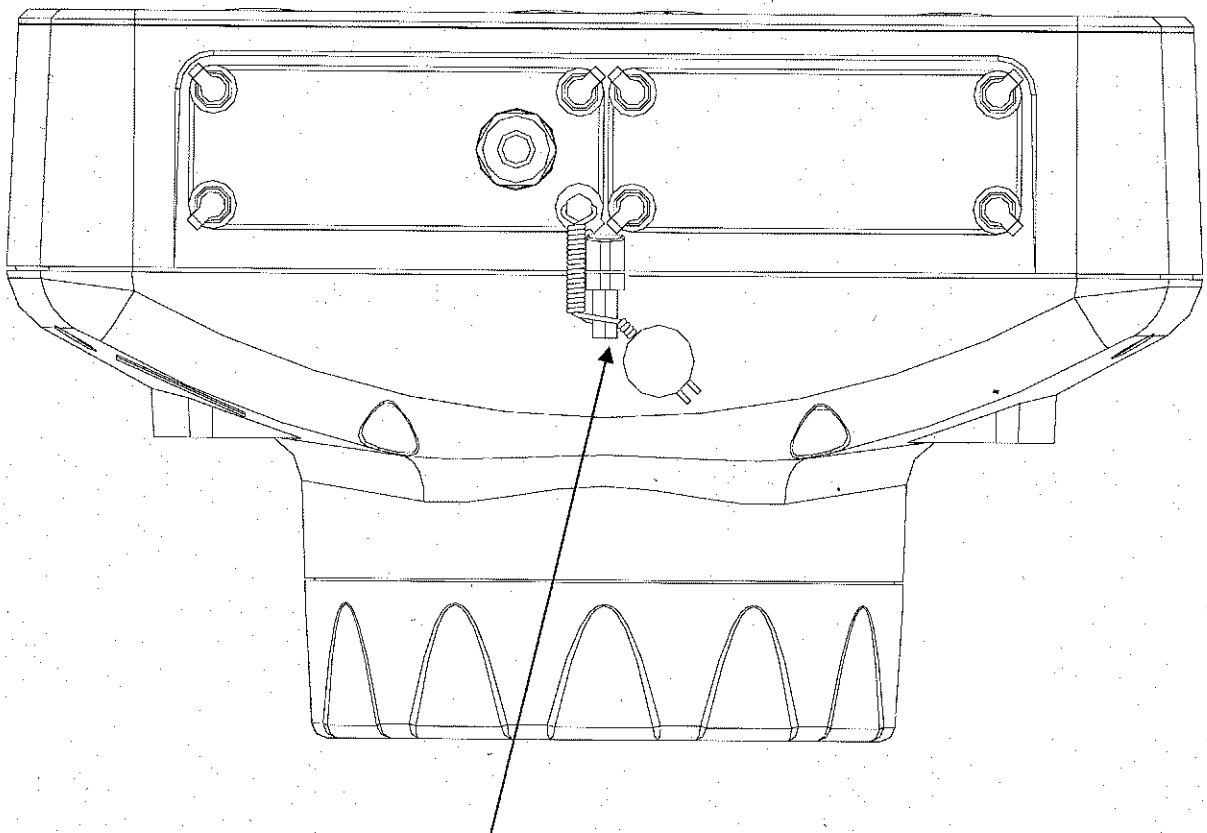


# Board Layout

USB Board



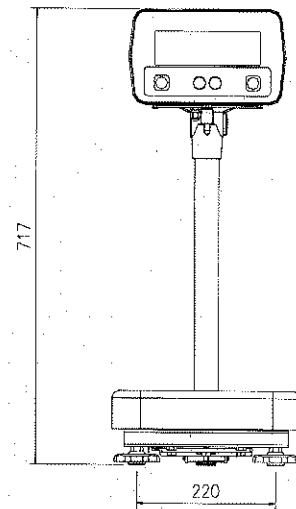
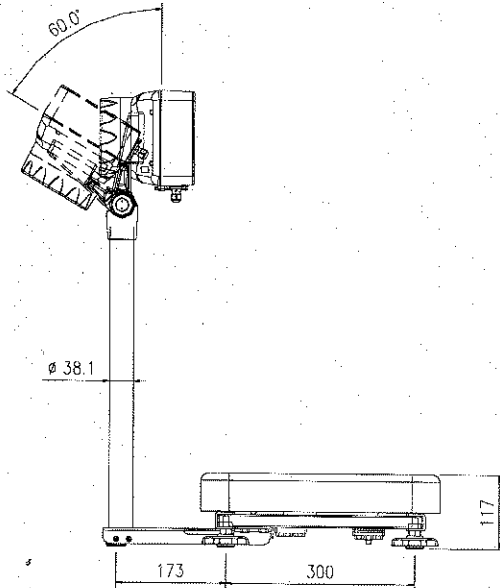
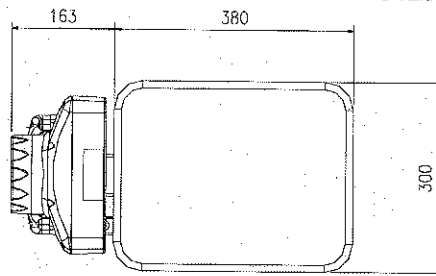
## Sealing



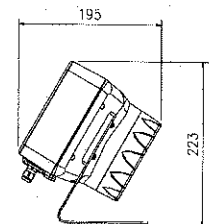
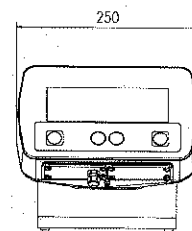
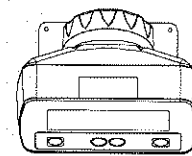
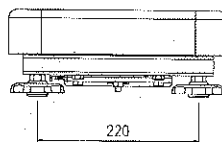
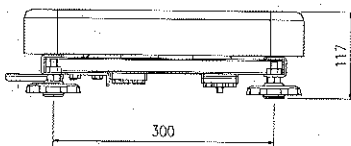
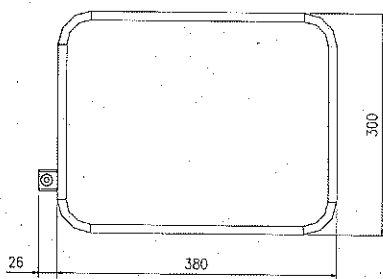
Wire locked screws

# Dimension

SC-30KAM  
 SC-60KAM  
 SC-150KAM



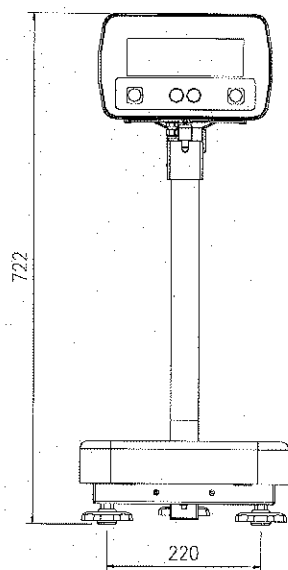
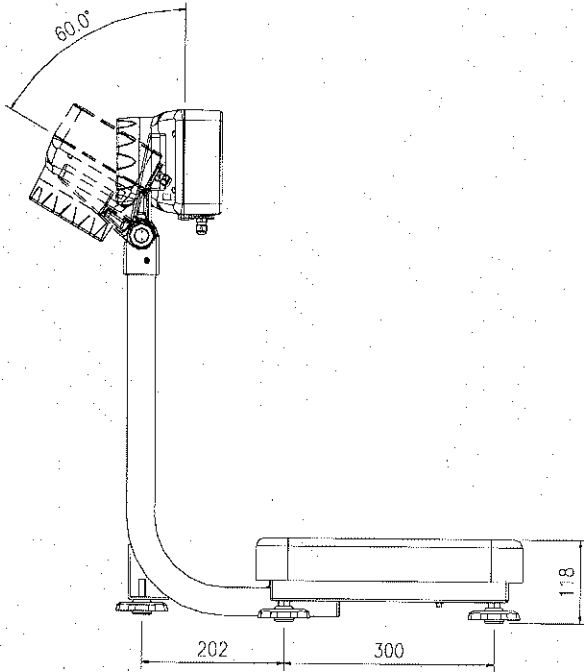
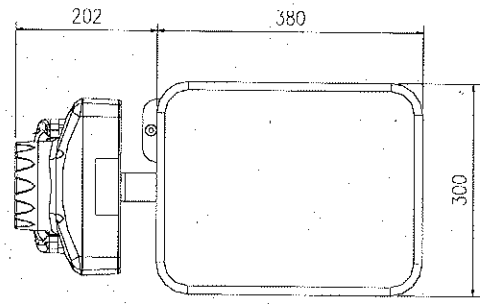
SC-30KBM  
 SC-60KBM  
 SC-150KBM



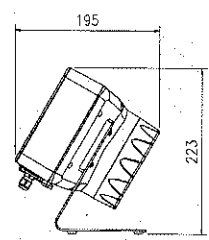
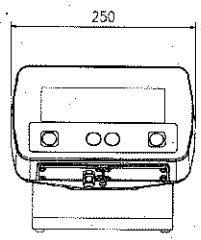
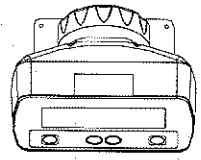
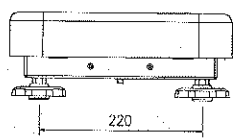
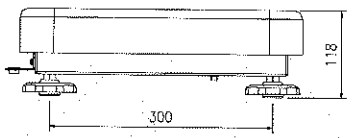
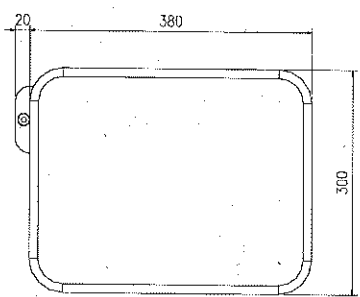
Unit : mm

# Dimension

SE-30KAM  
SE-60KAM  
SE-150KAM



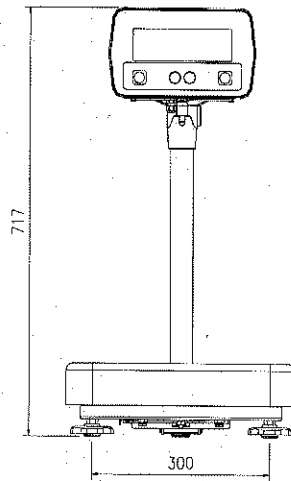
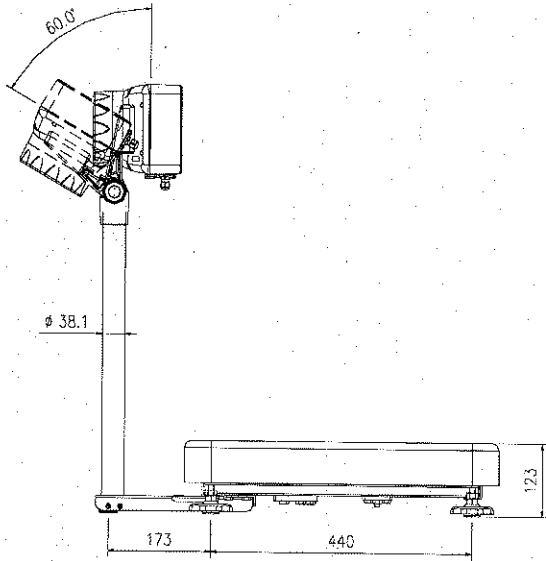
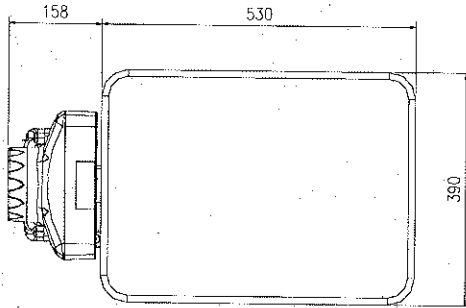
SE-30KBM  
SE-60KBM  
SE-150KBM



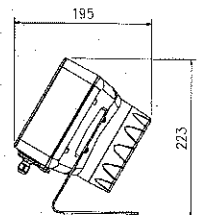
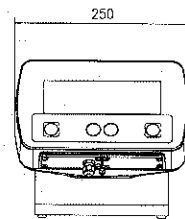
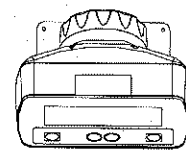
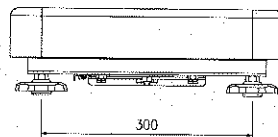
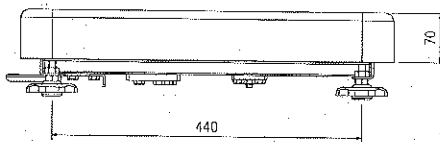
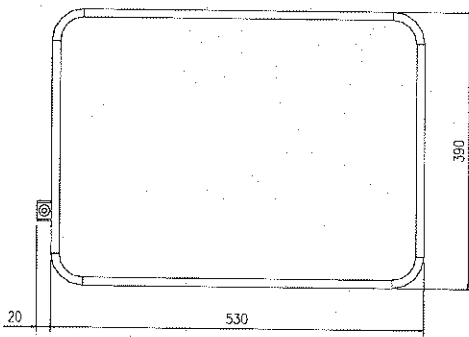
Unit : mm

# Dimension

SC-60KAL  
SC-150KAL



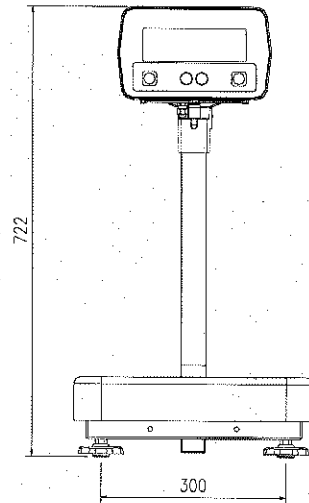
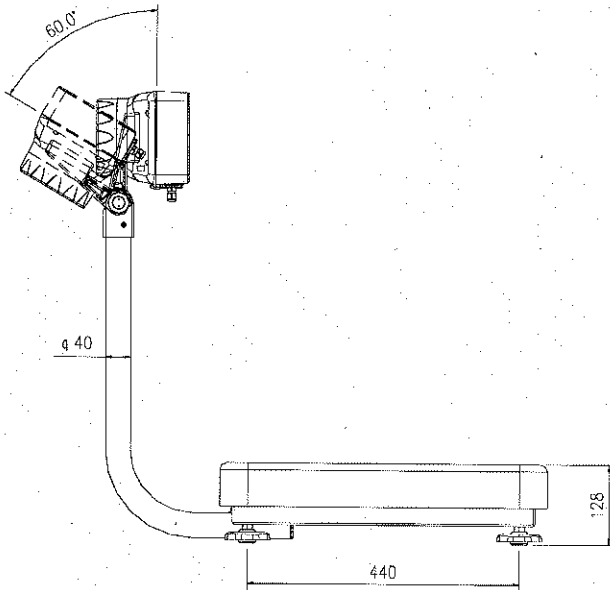
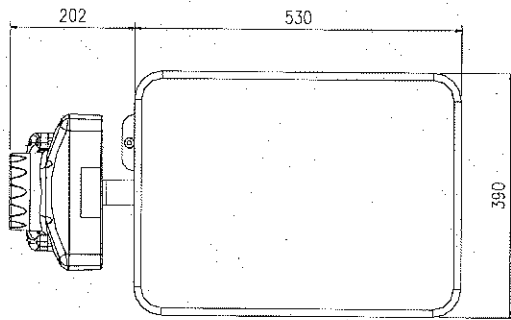
SC-60KBL  
SC-150KBL



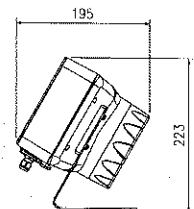
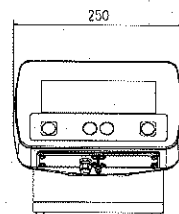
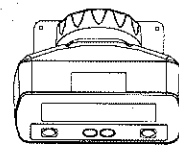
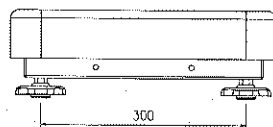
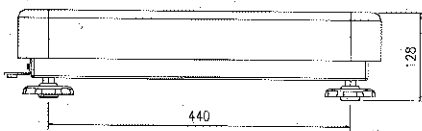
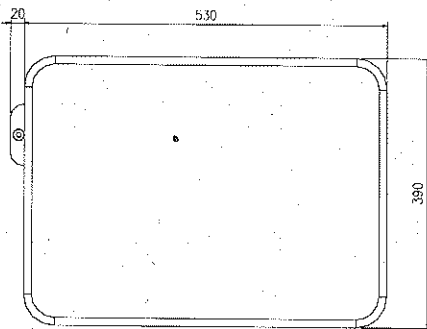
Unit : mm

# Dimension

SE-60KAL  
SE-150KAL

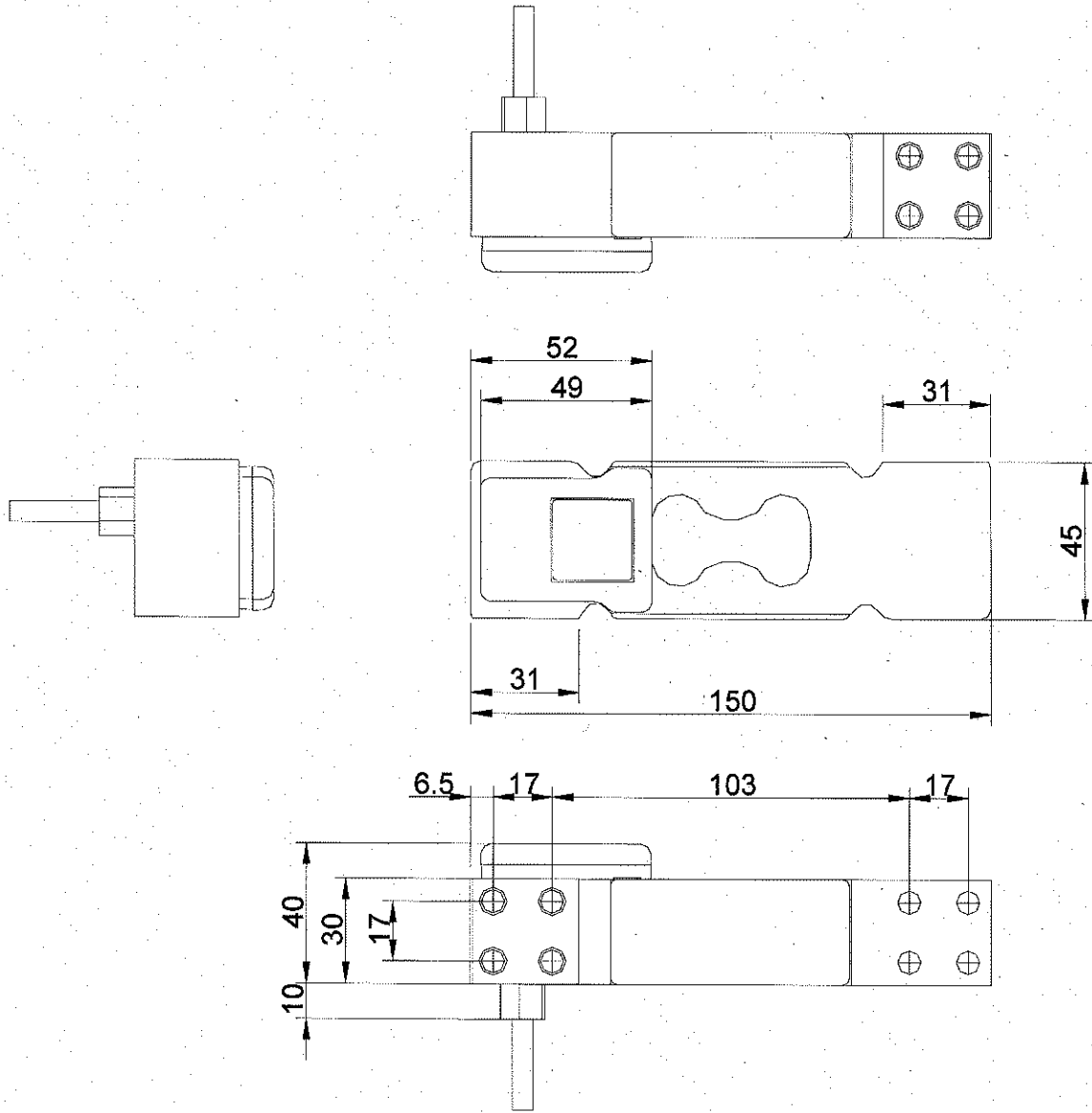


SE-60KBL  
SE-150KBL



Unit : mm

# Load cell



Unit : mm





## Test Report

### Non-automatic weighing instruments

Project number : OIML92-11-02  
Test report number : 11-02 / R76:1992  
Test specifications : OIML R76-1 (edition 1992),  
including Amendment 1(1994)  
Applicant : A&D Company, Limited  
Manufacturer : A&D SCALES CO.,LTD  
Date of application : 2011-11-4  
End of Test : 2011-11-17

#### Testing Laboratory

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

Signature:

Yasuhiro Koyano

Chief of Legal Weighing Metrology Section  
Mechanical Metrology Division

Date: 2011.12.1

## CONTENTS

MODEL : SE-30KBM

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INFORMATION CONCERNING TEST EQUIPMENT USED FOR PATTERN EVALUATION	: 5
SUMMARY OF PATTERN EVALUATION	: 6
TESTS DATA	: 7-58

## GENERAL INFORMATION CONCERNING THE PATTERN

Application N°: 23-010

Pattern designation: SE-30KBM

Manufacturer: A&D SCALES CO.,LTD

Applicant: A&D Company, Limited

Instrument category: Non-automatic weighing instruments

Complete instrument       Module(★)

Accuracy class:  I     II     III     IIII

Self-       Semi-self       Non-self-indicating

Min =  kg

e =  kg      Max =  kg      d =  g      n =

e<sub>1</sub> =  kg      Max<sub>1</sub> =  kg      d<sub>1</sub> =  g      n =

e<sub>2</sub> =  kg      Max<sub>2</sub> =  kg      d<sub>2</sub> =  g      n =

T = +       T = -  kg

U<sub>n</sub> =  V    U<sub>min</sub> =  V    U<sub>max</sub> =  V    f =  Hz      Battery, U =  V

Zero-setting device:

Non-automatic

Semi-automatic

Automatic zero-setting

Initial zero-setting

Zero tracking

Tare device:

Tare balancing

Tare weighing

Preset tare device

Subtractive tare

Additive tare

Combined zero/tare device

Initial zero-setting range =  %      Temperature range:  °C

Printer:  Built-in     Connected     Non present but     No connection  
Connectable

Instrument submitted: SE-30KBM      Loadcell: \_\_\_\_\_

Identification N°: A      Manufacturer: A&D SCALES CO.,LTD

Connected equipment: Printer, External Display      Type: \_\_\_\_\_

Capacity: 490N

Interfaces: (number, nature) RS-232C, USB, RELAY      Number: 1

Remarks: see following page      Classification symbol: \_\_\_\_\_

Date of report: 2011-11-18      Evaluation period: 2011-7-15 – 2011-8-12  
2011-11-4 – 2011-11-17

Observer: Fukuda, Otani, Takahashi, Yamada

(★) The test equipment (simulator or a part of a complete instrument) connected to the module shall be defined in the test form(s) used.

GENERAL INFORMATION CONCERNING THE PATTERN  
(continued)

Use this space to indicate additional remarks and/or information: connections equipment, interfaces and load cells, choice of the manufacturer regarding protection against disturbances (5.1.1.a or 5.1.1.b), etc.

INFORMATION CONCERNING TEST EQUIPMENT  
USED FOR PATTERN EVALUATION

Function	Manufacturer	Type	Identification	Range
Weight 1 g	Akiyama	stainless-steel	No identification (For additional load)	
Weight 100 g	Akiyama	stainless-steel	N° :15	
Weight 200 g	Byakko	stainless-steel	N° :12	
Weight 2 kg	Byakko	stainless-steel	N° :15	
Weight 5 kg	Byakko	stainless-steel	N° :8	
Weight 10 kg	Akiyama	stainless-steel	N° :7,9,15	
Voltage	Kikusui	PCR2000W	AL001776	AC 1-300V DC 1.4-424V 1-500Hz
Burst	Noise Ken	FNS-2002	FNS0330137	0-4.6kV
ESD	Noise Ken	ESS-2000	ESS03X2247	0.2-30kV
Power reduction	Noise Ken	VDS-2002	VDS0370058	30V-240V
EMI	EMPOWER	2048	1003	0.01MHz-250MHz
EMI	IFI	SMIC-100	2193-4393	200MHz-1000MHz
Antenna	SCHAFFNER	CBL6144	1018	26MHz-3GHz
Temp.	SHINYEI	TRH-CA	3587	-20-80°C
Rel.hum.				20-99.9%RH
	Rotronic	HP101A-L25W1W	22922 001	-20-60°C
				0-100%RH
Bar. Pressure	Yokogawa	MT110-265242	12W521726 E	0-130kPa

## SUMMARY OF PATTERN EVALUATION

Application N°: 23-010  
 Pattern designation: SE-30KBM

	TESTS	Report page	PASSED	FAILED	Remarks
1	Weighing performance Temp	Initial			
		25°C	7-8	X	D1146 <sup>(★)</sup>
		20°C	9	X	D1146 <sup>(★)</sup>
		34°C	10	X	D1146 <sup>(★)</sup>
		0°C	11	X	D1146 <sup>(★)</sup>
		5°C	12	X	D1146 <sup>(★)</sup>
		19°C	13	X	D1146 <sup>(★)</sup>
2	Temperature effect on no-load indication	14	X		D1146 <sup>(★)</sup>
3.1	Eccentricity using weights	15	X		D1146 <sup>(★)</sup>
3.2	Eccentricity using a rolling load				N. A.
4.1	Discrimination	16	X		D1146 <sup>(★)</sup>
4.2	Sensitivity				N. A.
5	Repeatability	17	X		D1146 <sup>(★)</sup>
6.1	Zero return	18	X		D1146 <sup>(★)</sup>
6.2	Creep	19	X		D1146 <sup>(★)</sup>
7	Stability of equilibrium	20	X		D1146 <sup>(★)</sup>
8	Tilting	21	X		D1146 <sup>(★)</sup>
9	Tare	22-23	X		D1146 <sup>(★)</sup>
10	Warm-up time	24	X		D1146 <sup>(★)</sup>
11	Voltage variations				N. A.
12.1	Short time power reductions				N. A.
12.2	Electrical bursts	a) Power supply lines			N. A.
		b) I/O circuits and communication lines	25	X	D1146 <sup>(★)</sup>
12.3	Electrostatic discharges	a) Direct application	26,30	X	D1146 <sup>(★)</sup>
		b) Indirect application(contact discharges only)	27-29 31-33	X	D1146 <sup>(★)</sup>
12.4	Immunity to radiated electromagnetic fields	34-35	X		D1146 <sup>(★)</sup>
13	Damp heat, steadystate	a) Initial test(at reference temperture)	36	X	D1146 <sup>(★)</sup>
		b) Test at high tempertureand 85%relative humidity	37	X	D1146 <sup>(★)</sup>
		c) Final test(at reference temperture)	38	X	D1146 <sup>(★)</sup>
14	Span stability	39-44	X		D1146 <sup>(★)</sup>
15	Endurance	a) Initial test	45	X	D1146 <sup>(★)</sup>
		c) Final test	46	X	D1146 <sup>(★)</sup>
	EXAMINATIONS				
16	Examination of the construction	47			
17	Checklist	48-58	X		

(★) D1146 is Japanese type approval number.

1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Determination Of The Initial Intrnsic error)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 15-Jul-11  
 Observer: Otani/Yamada  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test  
 (smaller than e):

	At start	At max	At end	
Temp.	24.8		24.8	°C
Rel.h	57.4			%
Time	09:03	09:10	09:15	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/>	Non-existent	<input type="checkbox"/>	Not in operation
<input checked="" type="checkbox"/>	Out of working range	<input type="checkbox"/>	In operation

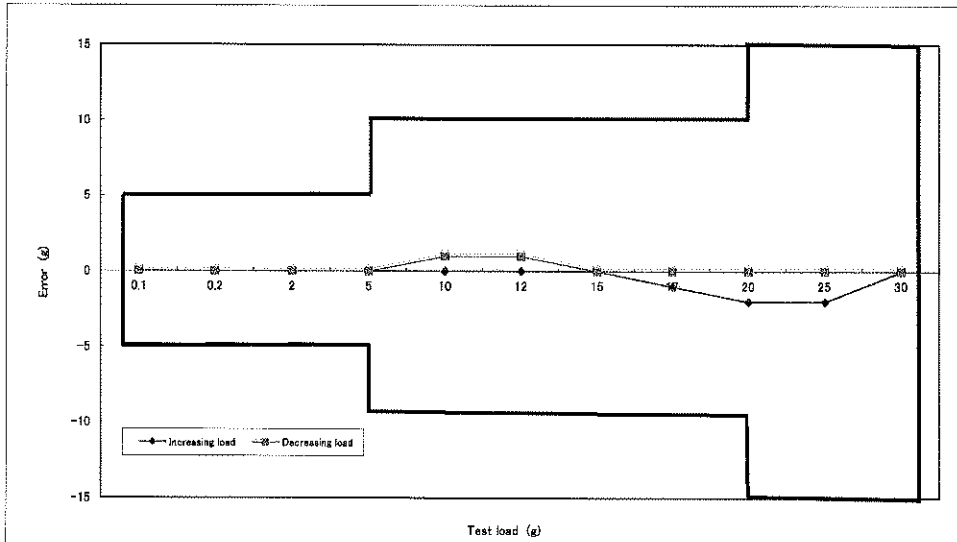
Initial zero-setting > 20% of Max  No

$E = | +1/2e - \Delta L - L$   
 $E_c = E - E_0$  with  $E_0$  = error calculated at or near zero (\*)

Load (L) kg	Indication (I) g		Add.Load (ΔL) g		Error (E) g		Corrected error (Ec) g		mpe g
	↓	↑	↓	↑	↓	↑	↓	↑	
(*) 0.1	0.10	0.10	5	5	0	0	0	0	5
0.2	0.20	0.20	5	5	0	0	0	0	5
2	2.00	2.00	5	5	0	0	0	0	5
5	5.00	5.00	5	5	0	0	0	0	5
10	10.00	10.00	5	4	0	1	0	1	10
12	12.00	12.00	5	4	0	1	0	1	10
15	15.00	15.00	5	5	0	0	0	0	10
17	17.00	17.00	6	5	-1	0	-1	0	10
20	20.00	20.00	7	5	-2	0	-2	0	10
25	25.00	25.00	7	5	-2	0	-2	0	15
30	30.00	30.00	5	5	0	0	0	0	15

PASSED  FAILED

Remarks:



1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Determination Of The Initial Intrinsic error)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 15-Jul-11  
 Observer: Otani/Yamada  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test (smaller than e): 0.5 g

	At start	At max	At end
Temp.	24.8		24.6 °C
Rel.h	57.9		%
Time	09:15	09:18	09:20
Bar.pres			hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/>	Non-existent	<input type="checkbox"/>	Not in operation
<input checked="" type="checkbox"/>	Out of working range	<input type="checkbox"/>	In operation

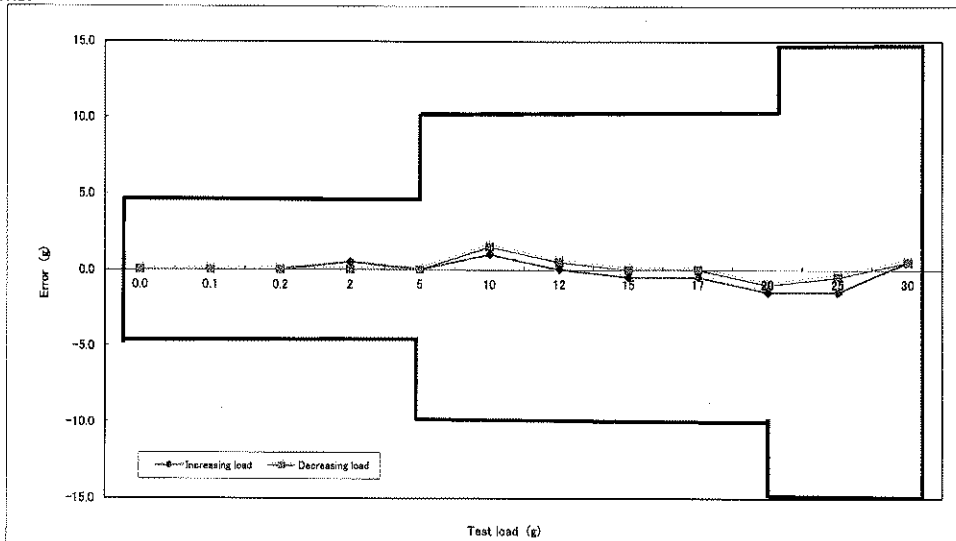
Initial zero-setting > 20% of Max  No

$E = | +1/2e - \Delta L - L$   
 $E_c = E - E_0$  with  $E_0$  = error calculated at or near zero(\*)

Load (L)	Indication (I)		Add.Load ( $\Delta L$ )		Error (E)		Corrected error (Ec)		mpe
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
(*) 0.0	0	0			0.0	0.0	0.0	0.0	5
0.1	200	200			0.0	0.0	0.0	0.0	5
0.2	400	400			0.0	0.0	0.0	0.0	5
2	4001	4000			0.5	0.0	0.5	0.0	5
5	10000	10000			0.0	0.0	0.0	0.0	5
10	20002	20003			1.0	1.5	1.0	1.5	10
12	24000	24001			0.0	0.5	0.0	0.5	10
15	29999	30000			-0.5	0.0	-0.5	0.0	10
17	33999	34000			-0.5	0.0	-0.5	0.0	10
20	39997	39998			-1.5	-1.0	-1.5	-1.0	10
25	49997	49999			-1.5	-0.5	-1.5	-0.5	15
30	60001	60001			0.5	0.5	0.5	0.5	15

PASSED  FAILED

Remarks:





1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Temperature Test)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 26-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	20.1		20.2	°C
Rel.h	49.5			%
Time	07:21	07:22	07:23	
Bar.pres				hPa
(only class $\text{D}$ )				

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/>	Non-existent	<input checked="" type="checkbox"/>	Not in operation
<input type="checkbox"/>	Out of working range	<input type="checkbox"/>	In operation

Initial zero-setting > 20% of Max  No

Temperature effect on no-load indication

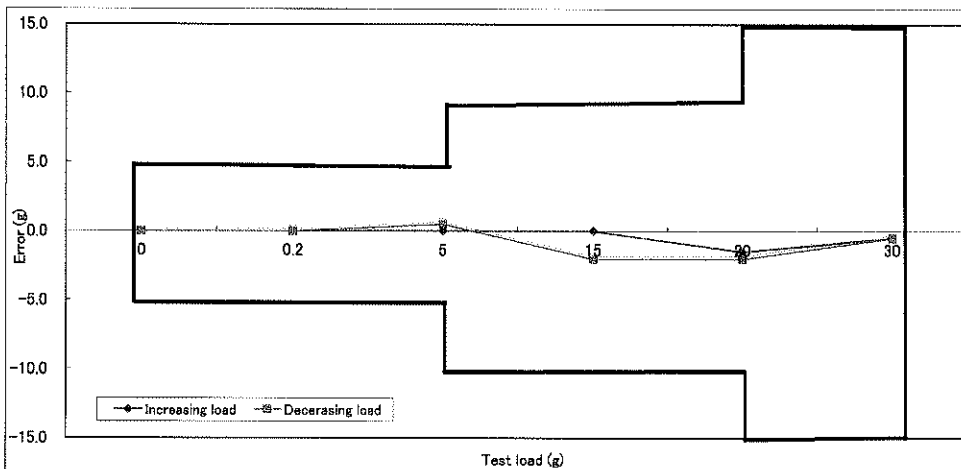
Time	Time	Temp	Indication(count)	P (g)
At start				
At end	7:28	20.2	13	6.5

$E = |1/2e - \Delta L - L$   
 $E_c = E - E_o$  with  $E_o = \text{error calculated at or near zero} (*)$

Load (L) kg	Indication (I)		Add. Load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	13	13			6.5	6.5	0.0	0.0	5
0.2	413	413			6.5	6.5	0.0	0.0	5
5	10013	10014			6.5	7.0	0.0	0.5	5
15	30013	30009			6.5	4.5	0.0	-2.0	10
20	40010	40009			5.0	4.5	-1.5	-2.0	10
30	60012	60012			6.0	6.0	-0.5	-0.5	15

PASSED  FAILED

Remarks:



1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Temperature Test)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 26-Jul-11  
 Observer: Otani  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	40.1		40.1	°C
Rel.h	36.0			%
Time	14:32	14:34	14:35	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/>	Non-existent	<input checked="" type="checkbox"/>	Not in operation
<input type="checkbox"/>	Out of working range	<input type="checkbox"/>	In operation

Initial zero-setting > 20% of Max  No

Temperature effect on no-load indication

Time	Time	Temp	Indication(count)	P (g)
At start	14:31	40.1	26	13.0
At end	14:40	40.3	26	13.0

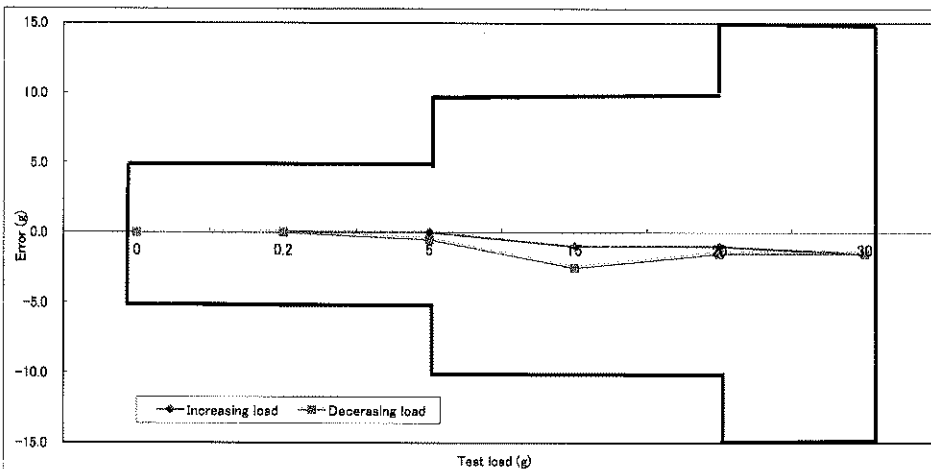
$$E = |1/2e - \Delta L - L|$$

$E_c = E - E_o$  with  $E_o$  = error calculated at or near zero(\*)

Load (L) kg	Indication (I)		Add.Load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	25	25			12.5	12.5	0.0	0.0	5
0.2	425	425			12.5	12.5	0.0	0.0	5
5	10025	10024			12.5	12.0	0.0	-0.5	5
15	30023	30020			11.5	10.0	-1.0	-2.5	10
20	40023	40022			11.5	11.0	-1.0	-1.5	10
30	60022	60022			11.0	11.0	-1.5	-1.5	15

PASSED  FAILED

Remarks:



# 1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1) (Temperature Test)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 27-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	-10.7		-10.3	°C
Rel.h	51.8			%
Time	07:43	07:44	07:45	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/>	Non-existent	<input checked="" type="checkbox"/>	Not in operation
<input type="checkbox"/>	Out of working range	<input type="checkbox"/>	In operation

Initial zero-setting > 20% of Max  No

Temperature effect on no-load indication

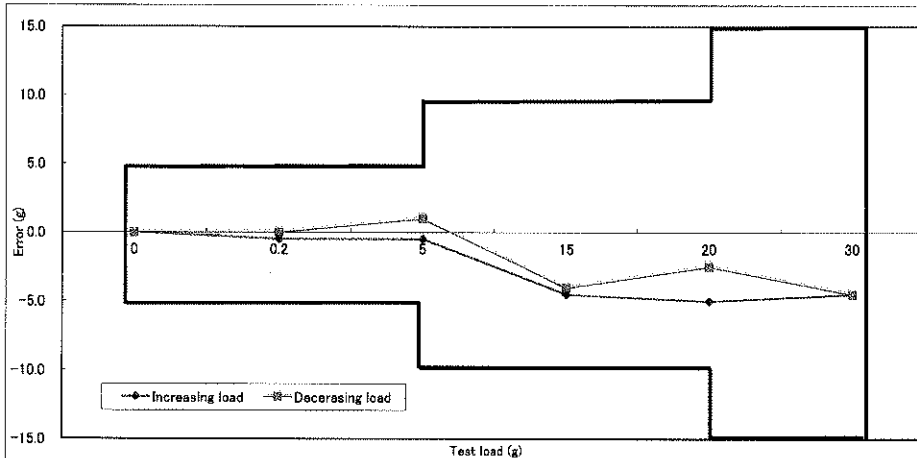
Time	Time	Temp	Indication(count)	P (g)
At start	7:43	-10.7	6	3.0
At end	7:50	-10.4	8	4.0

$E = I + 1/2e - \Delta L - L$   
 $E_c = E - E_0$  with  $E_0$  = error calculated at or near zero(\*)

Load (L) kg	Indication (I) count		Add. Load ( $\Delta L$ ) g		Error (E) g		Corrected error ( $E_c$ ) g		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	8	8			4.0	4.0	0.0	0.0	5
0.2	407	408			3.5	4.0	-0.5	0.0	5
5	10007	10010			3.5	5.0	-0.5	1.0	5
15	29999	30000			-0.5	0.0	-4.5	-4.0	10
20	39998	40003			-1.0	1.5	-5.0	-2.5	10
30	59999	59999			-0.5	-0.5	-4.5	-4.5	15

PASSED  FAILED

Remarks:



1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Temperature Test)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 27-Jul-11  
 Observer: Otani  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	4.7		4.9	°C
Rel.h	55.3			%
Time	13:24	13:26	13:28	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

Non-existent  Not in operation  
 Out of working range  In operation

Initial zero-setting > 20% of Max  No

Temperature effect on no-load indication

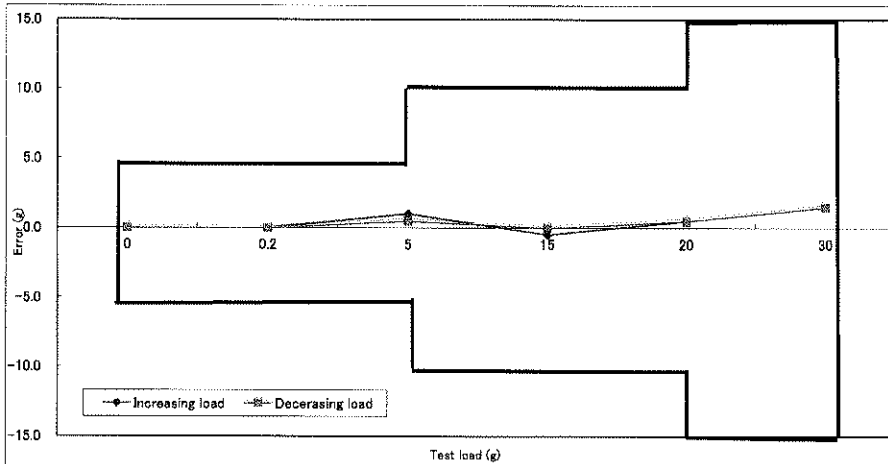
Time	Time	Temp	Indication(count)	P (g)
At start	13:24	4.7	19	9.5
At end	13:33	4.9	19	9.5

$E = l + 1/2e - \Delta L - L$   
 $E_c = E - E_0$  with  $E_0$  = error calculated at or near zero(\*)

Load (L) kg	Indication (I)		Add. Load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	20	20			10.0	10.0	0.0	0.0	5
0.2	420	420			10.0	10.0	0.0	0.0	5
5	10022	10021			11.0	10.5	1.0	0.5	5
15	30019	30020			9.5	10.0	-0.5	0.0	10
20	40021	40021			10.5	10.5	0.5	0.5	10
30	60023	60023			11.5	11.5	1.5	1.5	15

PASSED  FAILED

Remarks:



1. WEIGHING PERFORMANCE (A.4.4)(A5.3.1)  
(Temperature Test)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 28-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	19.8		19.9	°C
Rel.h	50.5			%
Time	07:38	07:39	07:40	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

<input type="checkbox"/> Non-existent	<input checked="" type="checkbox"/> Not in operation
<input type="checkbox"/> Out of working range	<input type="checkbox"/> In operation

Initial zero-setting > 20% of Max  No

Temperature effect on no-load indication

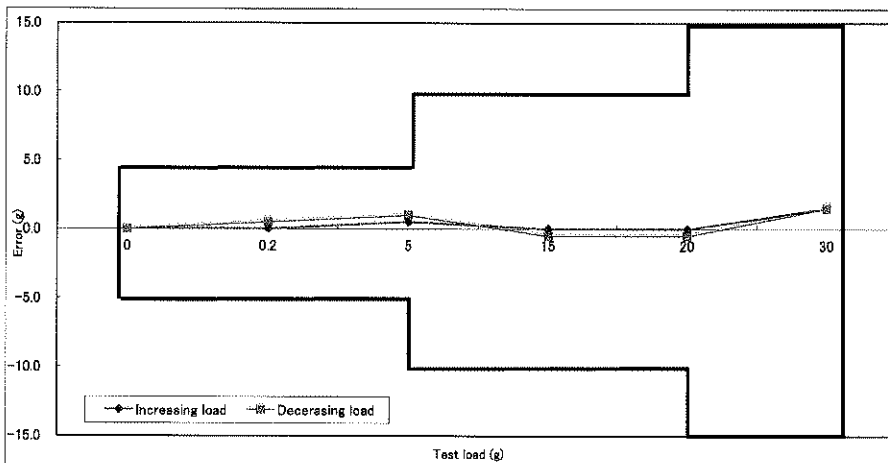
Time	Time	Temp	Indication(count)	P (g)
At start	7:38	19.8	26	13.0
At end				

$E = l + 1/2e - \Delta L - L$   
 $E_c = E - E_o$  with  $E_o$  = error calculated at or near zero(\*)

Load (L) kg	indication (I)		Add. Load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	25	25			12.5	12.5	0.0	0.0	5
0.2	425	426			12.5	13.0	0.0	0.5	5
5	10026	10027			13.0	13.5	0.5	1.0	5
15	30025	30024			12.5	12.0	0.0	-0.5	10
20	40025	40024			12.5	12.0	0.0	-0.5	10
30	60028	60028			14.0	14.0	1.5	1.5	15

PASSED  FAILED

Remarks:



2. TEMPERATURE EFFECT ON NO-LAOD INDICATION(A.5.3.2)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Observer: Fukuda/Otani  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

Automatic zero-setting and zero-tracking device is:

Non-existent  Not in operation  
 Out of working range  In operation

Report page (*)	Date	Time	Temp °C	Zero-Indication count	Add.load	P g	ΔP g	ΔTemp °C	Zero-change (5°C) g
10	26-Jul-11	7:28	20.2	13		6.5			
	26-Jul-11	14:31	40.1	26		13.0	6.5	20.0	1.6
11	26-Jul-11	14:40	40.3	26		13.0			
	27-Jul-11	7:43	-10.7	6		3.0	10.0	50.9	1.0
12	27-Jul-11	7:50	-10.4	8		4.0			
	27-Jul-11	13:24	4.7	19		9.5	5.5	15.1	1.8
13	27-Jul-11	13:33	4.9	19		9.5			
	28-Jul-11	7:38	19.8	26		13.0	3.5	14.9	1.2

ΔP=difference of P for two consecutive tests at different temperatures  
 ΔTemp=difference of Temp for two consecutive tests at different temperatures  
 Check if the zero-change per 5°C is smaller than e (class II III )  
 Check if the zero-change per 1°C is smaller than e (class I )

PASSED  FAILED

Remarks:

(\*)Give the report page of the relevant weighing test where weighing tests and temperature effect on no-load indication test are conducted together (see R76-1,figure 10).

### 3. ECCENTRICITY (A.4.7)

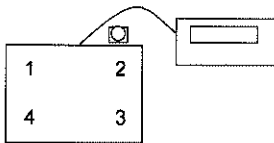
(3.1 eccentricity using weights(A.4.7.1,2and3)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 19-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	24.7			°C
Rel.h				%
Time	07:41			
Bar.pres				hPa

(only class  $\text{D}$ )

Location of loads:mark on a sketch (see an example below) the successive locations of test loads,using which shall be repeated in table below.



Also indicate in the sketch the location of the display or of another perceptible part of the instrument.

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$$E = I + 1/2e - \Delta L - L$$

$E_c = E - E_0$  with  $E_0$ =error calculated at or near zero(\*)

	Load (L) kg	Location	Indication (I) count	Add.load ( $\Delta L$ ) g	Error (E) g	Corrected error ( $E_c$ ) g	mpe g
(*)	0	1	3		1.5	0.0	5
	10	1	20010		5.0	3.5	10
(*)	0	2	3		1.5	0.0	5
	10	2	20003		1.5	0.0	10
(*)	0	3	3		1.5	0.0	5
	10	3	20001		0.5	-1.0	10
(*)	0	4	3		1.5	0.0	5
	10	4	20008		4.0	2.5	10

PASSED       FAILED

Remarks:

#### 4. DISCRIMINATION AND SENSITIVITY

##### 4.1 DISCRIMINATION

##### 4.1.1 Digital indication(A.4.8.2)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 19-Jul-11  
 Observer: Fukuda

	At start	At max	At end	
Temp.	24.7			°C
Rel.h				%
Time	07:50			
Bar.pres				hPa

Load (L) kg	Indication (I1) kg	Remove load (ΔL) g	Add. 1/10d g	Extra load =1.4d g	Indication (I2) g	I2-I1 g
0.2	0.20	6	1	14	0.21	0.01
15	15.00	6	1	14	15.01	0.01
30	30.00	6	1	14	30.01	0.01

Check if  $I_2 - I_1 = d$

PASSED  FAILED

Remarks:

Application N°: \_\_\_\_\_  
 Pattern designation: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Observer: \_\_\_\_\_

	At start	At max	At end	
Temp.				°C
Rel.h				%
Time				
Bar.pres				hPa

Load (L)	Indication (I1)	Remove load	Add. 1/10d	Extra load =1.4d	Indication (I2)	I2-I1

Check if  $I_2 - I_1 = d$

PASSED  FAILED

Remarks:



5.REPEATABILITY(A.4.10)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 19-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	24.5			°C
Rel.h				%
Time	07:44			
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

Load(weighing 1-10)  kg

Load(weighing 1-10)  kg

$P=I+1/2e-\Delta L$

	Indication of load count	Add.load ( $\Delta L$ ) g	P g
1	30003		15001.5
2	30003		15001.5
3	30003		15001.5
4	30003		15001.5
5	30003		15001.5
6	30003		15001.5
7	30003		15001.5
8	30004		15002.0
9	30003		15001.5
10	30003		15001.5

$P=I+1/2e-\Delta L$

	Indication of load count	Add.load ( $\Delta L$ ) g	P g
11	60004		30002.0
12	60004		30002.0
13	60004		30002.0
14	60005		30002.5
15	60005		30002.5
16	60004		30002.0
17	60005		30002.5
18	60003		30001.5
19	60005		30002.5
20	60005		30002.5

$P_{\max}-P_{\min}$ (weighing 1-10)  g

$P_{\max}-P_{\min}$ (weighing 11-20)  g

mpe  g

mpe  g

PASSED       FAILED

Remarks:

6.TIME-DEPENDENCE

6.1 Zero return(A.4.11.2)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 21-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	24.5		24.3	°C
Rel.h				%
Time				
Bar.pres				hPa

(only class ① )

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$P = |1/2e - \Delta L|$

Time of reading	Load kg	Indication of zero count	Add.load ( $\Delta L$ ) g	P kg
7:26	0	4		0.0020
After loading for 0.5h			Load= 30 kg	
7:56	0	6		0.0030

Change of zero indication:

$|\Delta P| = 0.0010 \text{ kg}$

Check if  $|\Delta P| \leq 0.5e$

PASSED       FAILED

Remarks:

6.TIME-DEPENDENCE

6.2 Creep(A.4.11.1)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 21-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	24.5		24.3	°C
Rel.h				%
Time				
Bar.pres				hPa

(only class  $\text{D}$ )

$P=1+1/2e-\Delta L$

Time	Load kg	Indication count	Add.load ( $\Delta L$ ) g	P kg	$\Delta P$ kg
7:26	0min	30	60005	30.0025	
7:31	5min		60005	30.0025	0.0000
7:41	15min		60006	30.0030	0.0005
7:56	30min		60007	30.0035	0.0010

(\*)

1h					
2h					
3h					
4h					

$\Delta P$ =difference between P at the start (0min)and P at a given time.

(\*)if  $|\Delta P| \leq 0.5e$  during the first 30 min and if the variation of  $|\Delta P|$  between 15min and 30min  $\leq 0.2e$ ,then the test is terminated.if not ,the test shall continue for the next 3.5 hour check that during the total 4 hours:  $|\Delta P| \leq mpe$

PASSED       FAILED

Remarks:

7. STABILITY OF EQUILIBRIUM (A4.12)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 21-Jul-11  
 Observer: Otani/Yamada

	At start	At max	At end	
Temp.	24.2			°C
Rel.h				%
Time	09:10			
Bar.pres				hPa

In the case of printing or data storage

Load  kg

$P=|+1/2e-\Delta L$

No.	First printed of stored value after disturbance and command kg	Reading during 5s after print-out or storage	
		Minimum kg	Maximum kg
1	15.00	15.00	15.00
2	15.00	15.00	15.00
3	15.00	15.00	15.00
4	15.00	15.00	15.00
5	15.00	15.00	15.00

Check if only two adjacent figures appear, one begin the printed value

PASSED  FAILED

No.	Load kg	Indication kg	Add.Load g	Error g
Zero setting (load : 0.59 kg )				
1	0.1	0.10	5	0
2	0.1	0.10	5	0
3	0.1	0.10	5	0
4	0.1	0.10	5	0
5	0.1	0.10	5	0
Tare balancing (load : 5 kg )				
1	0.1	0.10	5	0
2	0.1	0.10	6	-1
3	0.1	0.10	5	0
4	0.1	0.10	5	0
5	0.1	0.10	5	0

Check the accuracy according to 4.5.2 for zero setting and 4.5.3 for balancing

PASSED  FAILED

Remarks:

8.TILTING(A.5.1.2and3)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 20-Jul-11  
 Observer: Fukuda/Otani  
 Verification scale interval e: 0.01 kg  
 Resolution during test 1 count=  
 (smaller than e): 0.5 kg

	At start	At max	At end	
Temp.	23.8		23.9	°C
Rel.h				%
Time	13:12			
Bar.pres				hPa
(only class ①)				

- Tilting 0.2% (Class ① ② ③ )
- Tilting to the limiting value of level indicator (Class ① ② ③ and ④ ) if the tilting at this limiting value is greater than 0.2%
- Tilting to the limiting value of level indicator (class ① only) if the tilting is not greater than 0.2%, in which case the test shall not be performed.
- Tilting 5% if no level indicator on instrument liable to be tilted.

Give(if appropriate on a separate sheet)a sketch of the load receptor showing the location of the level indicator,if provided.

Automatic zero-setting and zero-tracking device is:

- Non-existent
- Not in operation
- Out of working range
- In operation

$$P_v = i_v + 1/2e - \Delta L (v=1,2,3,4)$$

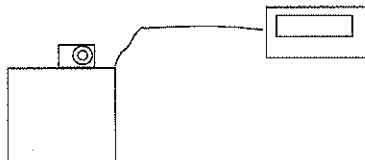
P<sub>v0</sub> is the indication p<sub>v</sub> corrected for the deviation from zero the instrument had prior loading

Load kg	l <sub>1a</sub> count	ΔL <sub>1</sub>	l <sub>2</sub> count	ΔL <sub>2</sub>	l <sub>3</sub> count	ΔL <sub>3</sub>	l <sub>4</sub> count	ΔL <sub>4</sub>	l <sub>5</sub> count	ΔL <sub>5</sub>	P <sub>1</sub> -P <sub>v</sub>  max or  P <sub>10</sub> -P <sub>v0</sub>  max
(L)											g
Unloaded(*)											
0	-2		-4		-3		-3		-4		
P <sub>v</sub> →	-1.0		-2.0		-1.5		-1.5		-2.0		1.0
Loaded											2e = 20 g
5	9998		9995		9997		9997		9995		
P <sub>v</sub> →	4999.0		4997.5		4998.5		4998.5		4997.5		
P <sub>v0</sub> →	5000.0		4999.5		5000.0		5000.0		4999.5		0.5
Loaded											mpe = 5 g
30	59998		59992		59990		59998		59986		
P <sub>v</sub> →	29999.0		29996.0		29995.0		29999.0		29993.0		
P <sub>v0</sub> →	30000.0		29998.0		29996.5		30000.5		29995.0		5.0
											mpe = 15 g

(\*)No tilting test at no-load for instruments in class ① and in class ② not for direct sales to public.

PASSED  FAILED

Remarks:



9. TARE(WEIGHING TEST)(A.4.6.1)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 20-Jul-11  
 Observer: Fukuda/Otani  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test  
 (smaller than e):d \_\_\_\_\_ kg

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

First tare value

tare:  kg

tare indication  kg

	At start	At max	At end	
Temp.	23.9		24.0	°C
Rel.h				%
Time	13:20		13:33	
Bar.pres				hPa

(only class ①)

$E = I + 1/2e - \Delta L - L$

$E_c = E - E_0$  with  $E_0$ =error calculated at or near zero(★)

Load (L) kg	Indication (I) kg		Add.Load (ΔL) g		Error (E) g		Corrected error (Ec) g		mpe g
	↓	↑	↓	↑	↓	↑	↓	↑	
0.1	0.10	0.10	5	5	0	0	0	0	5
0.2	0.20	0.20	5	5	0	0	0	0	5
5	5.00	5.00	5	5	0	0	0	0	5
15	15.00	15.00	7	7	-2	-2	-2	-2	10
20	20.00	20.00	8	8	-3	-3	-3	-3	10
25	25.00	25.00	6	6	-1	-1	-1	-1	15

PASSED       FAILED

Remarks:

TARE(WEIGHING TEST)(cont.)

Second tare value

tare:  kg

tare indication  kg

	At start	At max	At end	
Temp.	23.9		24.0	°C
Rel.h				%
Time	13:20		13:33	
Bar.pres				hPa
(only class $\text{O}$ )				

$$E = | +1/2e - \Delta L - L$$

$E_c = E - E_0$  with  $E_0$  = error calculated at or near zero (\*)

Load (L) kg	Indication (I)		Add.Load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
(*) 0.1	0.10	0.10	5	5	0	0	0	0	0.5
0.2	0.20	0.20	6	5	-1	0	-1	0	0.5
5	5.00	5.00	7	7	-2	-2	-2	-2	0.5
10	10.00	10.00	8	8	-3	-3	-3	-3	0.5
15	15.00	15.00	8	8	-3	-3	-3	-3	1.0
20	20.00	20.00	6	6	-1	-1	-1	-1	1.5

PASSED       FAILED

Remarks:

10. WARM-UP TIME(A5.2)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 20-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1 count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	24.5		24.3	°C
Rel.h				%
Time	7:28			
Bar.pres				hPa

(only class ① )

Duration of disconnection before test:

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$E = l + 1/2e - \Delta L - L$

Eo=Error calculated at zero or near zero.(unloaded)

El=Error calculated at load(loaded)

	Time	Load kg	Indication kg	Add.load g	Error g	EL-Eo g	mpe= 15 g
Unloaded	0 min	0.1	0.10	6	-1		
Loaded	7:28	30	30.00	5	0	1	
Unloaded	5 min	0.1	0.10	5	0		
Loaded	7:33	30	30.00	6	-1	-1	
Unloaded	15 min	0.1	0.10	5	0		
Loaded	7:43	30	30.00	5	0	0	
Unloaded	30 min	0.1	0.10	5	0		
Loaded	7:58	30	30.00	5	0	0	

(\*)Counted from the moment an indication has first appeared.Check that  $|EL-Eo| \leq mpe$

PASSED       FAILED

Remarks:



12. ELECTRICAL DISTURBANCE

12.2 Electrical bursts(B.3.2)

b) I/O circuits and communication lines

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 3-Aug-11  
 Observer: Otani  
 Verification  
 scale interval e: 0.01 g

	At start	At max	At end	
Temp.	28.2			°C
Rel.h	59.7			%
Time	9:33			
Bar.pres	1009.6			hPa

I/O signals, data and control line : test voltage 0.5kV, duration of the test 1 min at each polarity

Small test load kg	Cable/Interface	Polarity	Result	
			Indication (I) kg	Significant fault(> e) No Yes(remarks)
0.1	Without disturbance		0.10	
	LOAD CELL CABLE	Pos	0.10	X
		Neg	0.10	X
	Without disturbance		0.10	
	USB CABLE	Pos	0.10	X
		Neg	0.10	X
	Without disturbance		0.10	
	RS-232C	Pos	0.10	X
		Neg	0.10	X
	Without disturbance		0.10	
	RELAY CABLE	Pos	0.10	X
		Neg	0.10	X

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

PASSED       FAILED

Remarks:

12.3 ELECTROSTATIC DISCHARGES(B.3.3)

a)Direct application

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 3-Aug-11  
 Observer: Otani  
 Verification scale interval e: 0.01 kg

	At start	At max	At end	
Temp.	30.4			°C
Rel.h	52.7			%
Time	14:03			
Bar.pres	1007.9			hPa

Contact discharges     Paint penetration  
 Air discharges                      Polarity(\*)  pos     neg

Small test load kg	Discharges			Indication (i) kg	Result	
	Test voltage (kV)	Number of discharge s	Repetition interval(s)		Significant fault(> e)	
					No	Yes(remarks.test points)
0.1	Without disturbance			0.10		
	2	10	10	0.10	x	
	4	10	10	0.10	x	
	6	10	10	0.10	x	
	8	(Air discharges)		0.10	x	
	Without disturbance					
	2	10	10			
	4	10	10			
	6	10	10			
	8	(Air discharges)				

PASSED     FAILED

Remarks:

Note: if the EUT fails, the test point at which this occurs shall be recorded.

(\*) IEC 801-2 specifies that the test shall be conducted with the most sensitive polarity.

ELECTROSTATIC DISCHARGES(cont.)

b) Indirect application (contact discharges only)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 3-Aug-11  
 Observer: Otani/Yamada  
 Verification scale interval e: 0.01 kg

	At start	At max	At end	
Temp.	30.1			°C
Rel.h	51.3			%
Time	15:43			
Bar.pres	1007.6			hPa

Polarity(\*)  pos  neg

Horizontal coupling plane

USB

Small test load kg	Discharges			Result		
	Test voltage (kV)	Number of discharge s	Repetition interval(s)	Indication (I) kg	Significant fault(>e)	
					No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

Vertical coupling plane

Small test load kg	Discharges			Result		
	Test voltage (kV)	Number of discharge s	Repetition interval(s)	Indication (I) kg	Significant fault(>e)	
					No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

PASSED  FAILED

Remarks:

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

(\*) IEC 801-2 specifies that the test shall be conducted with the most sensitive polarity.

**ELECTROSTATIC DISCHARGES(cont.)**

b) Indirect application (contact discharges only)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 3-Aug-11  
 Observer: Otani  
 Verification scale interval e: 0.01 kg

	At start	At max	At end	
Temp.	30.4			°C
Rel.h	55.1			%
Time	17:08			
Bar.pres	1007.5			hPa

Polarity(\*)  pos  neg

Horizontal coupling plane

RS-232C

Small test load kg	Discharges			Indication (I) kg	Result	
	Test voltage (kV)	Number of discharge s	Repetition interval(s)		No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

Vertical coupling plane

Small test load kg	Discharges			Indication (I) kg	Result	
	Test voltage (kV)	Number of discharge s	Repetition interval(s)		No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

PASSED  FAILED

Remarks:

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

(\*) IEC 801-2 specifies that the test shall be conducted with the most sensitive polarity.

ELECTROSTATIC DISCHARGES(cont.)

b) Indirect application (contact discharges only)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 3-Aug-11  
 Observer: Otani/Yamada  
 Verification scale interval e: 0.01 kg

	At start	At max	At end	
Temp.	30.2			°C
Rel.h	45.0			%
Time	18:24			
Bar.pres	1007.6			hPa

Polarity(\*)  pos  neg

Horizontal coupling plane

relay

Small test load kg	Discharges			Indication (I) kg	Result	
	Test voltage (kV)	Number of discharge s	Repetition interval(s)		No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

Vertical coupling plane

Small test load kg	Discharges			Indication (I) kg	Result	
	Test voltage (kV)	Number of discharge s	Repetition interval(s)		No	Yes(remarks)
0.1	Without disturbance			0.10		
	2	10	10	0.10	X	
	4	10	10	0.10	X	
	6	10	10	0.10	X	

PASSED  FAILED

Remarks:

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

(\*) IEC 801-2 specifies that the test shall be conducted with the most sensitive polarity.

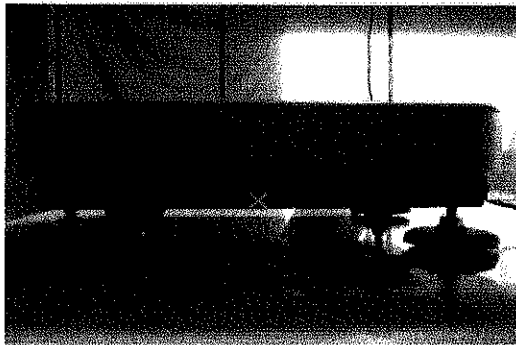
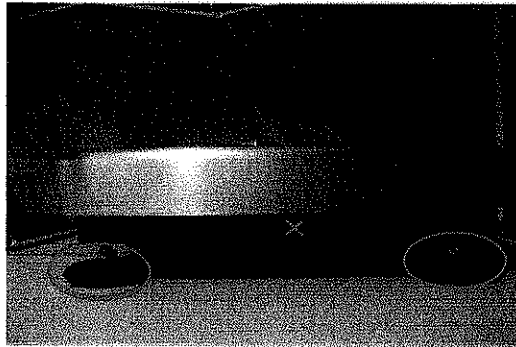
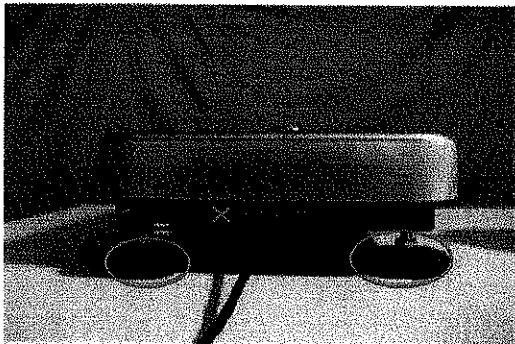
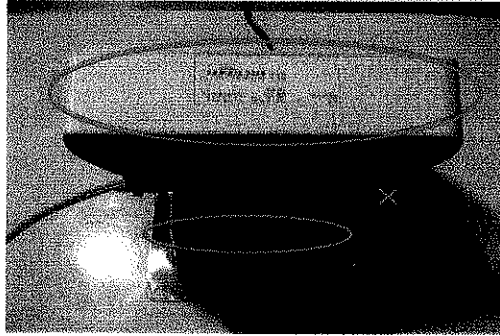
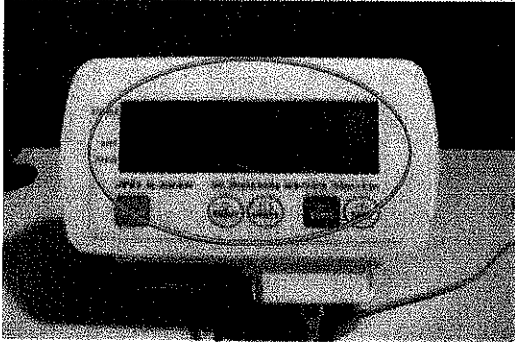
## ELECTROSTATIC DISCHARGES(cont.)

Specification of test points of EUT (direct application),e.g.by photos or sketches

a)Direct application

Contact discharges : X

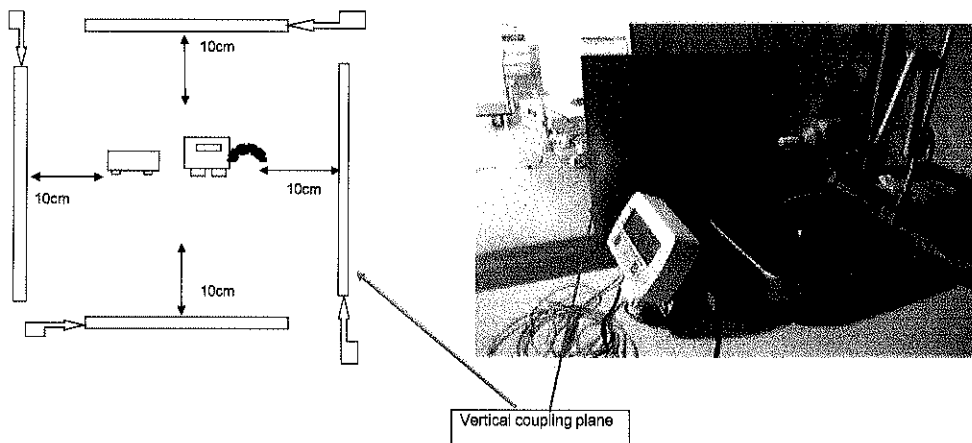
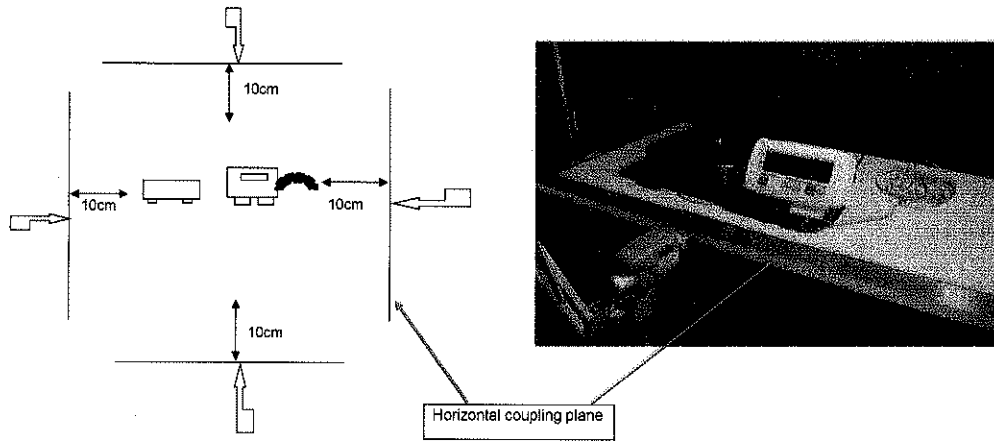
Air discharges: ○



### ELECTROSTATIC DISCHARGES(cont.)

Specification of test points of EUT (direct application), e.g. by photos or sketches

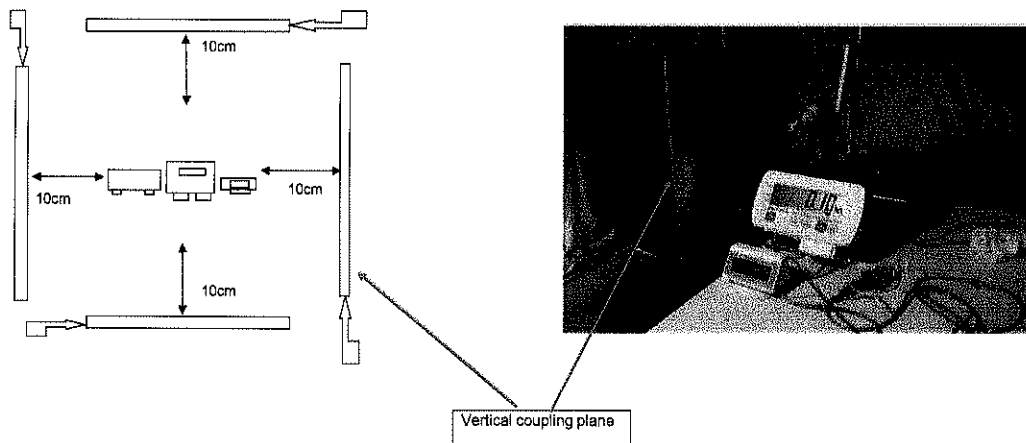
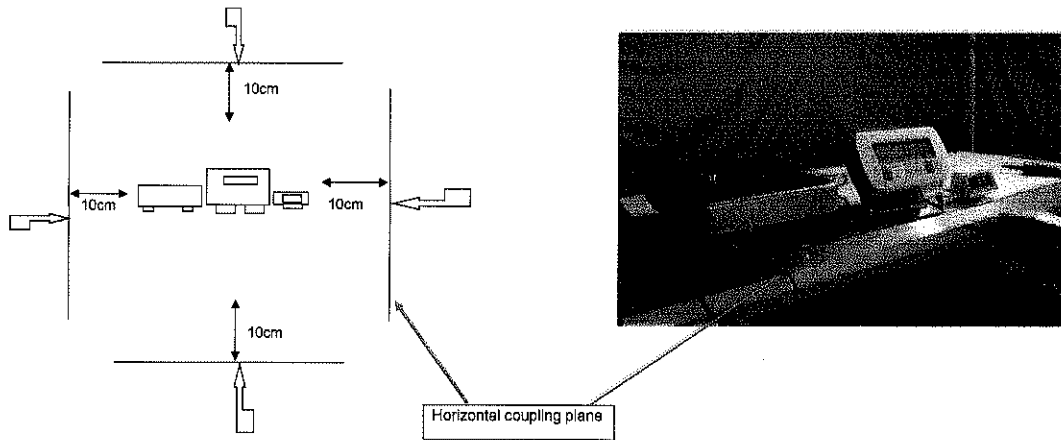
b) Indirect application



### ELECTROSTATIC DISCHARGES(cont.)

Specification of test points of EUT (direct application), e.g. by photos or sketches

b) Indirect application

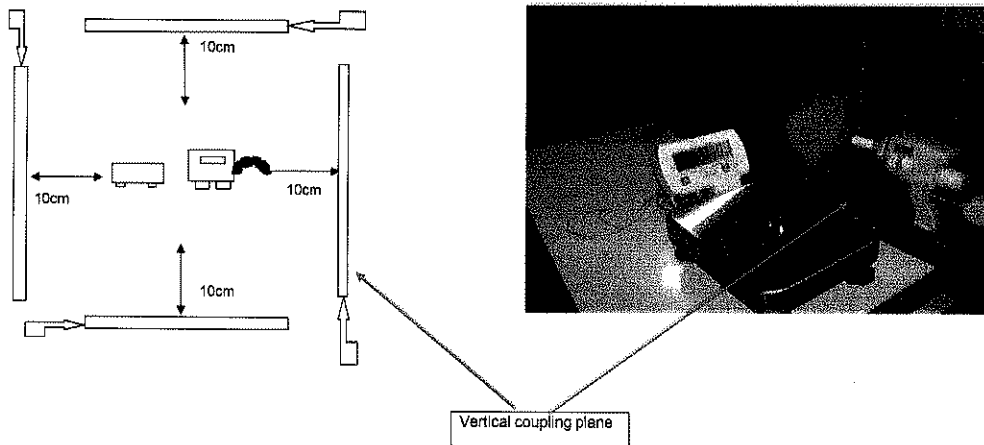
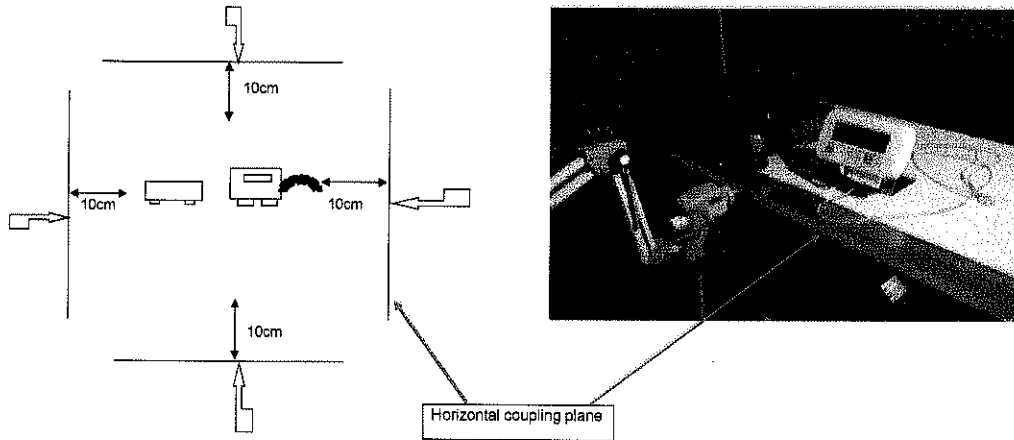




## ELECTROSTATIC DISCHARGES(cont.)

Specification of test points of EUT (direct application), e.g. by photos or sketches

b) Indirect application



12.4 Immunity to radiated electromagnetic fields(B.3.4)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 1-Aug-11 - 2-Aug-11  
 Observer: Otani/Takahashi/Yamada

	At start	At max	At end	
Temp.	26.3			°C
Rel.h	57.3			%
Time	8:30			
Bar.pres	1008.4			hPa

Rate of sweep:  s

Load:  kg Material load: paper

Discharges				Result			
Antenna	Frequency range (MHz)	Polarization	Facing EUT	Indication (I) kg	Significant fault(>e)		
					No	Yes(remarks)	
Without disturbance				0.10			
Bilog	26-1000	Vertical	Front	0.10	X		
			Right	0.10	X		
			Left	0.10	X		
			Rear	0.10	X		
		Horizontal	Front	0.10	X		
			Right	0.10	X		
			Left	0.11	X	204MHz	
			Rear	0.10	X		
Bilog	26-1000	Vertical	Front	0.10	X		
			Left	0.10	X		
		Horizontal	Front	0.11	X	164,167,200MHz	
			Left	0.10	X		
		Vertical	Front	0.10	X		
			Left	0.10	X		
			Horizontal	Front	0.10	X	
				Left	0.10	X	

Frequency range:26-1000MHz  
 Field strength:3V/m  
 Modulation:80%AM,1kHz sine wave

PASSED  FAILED

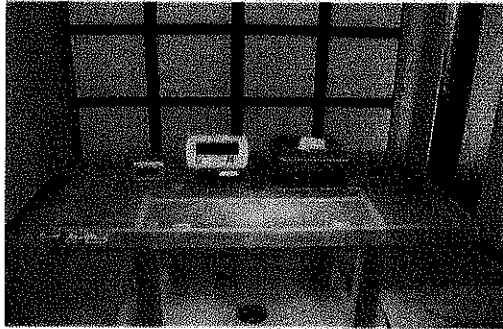
Remarks:

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

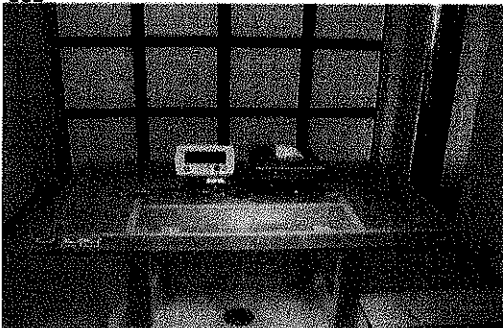
### Immunity to radiated electromagnetic fields(cont.)

description of the set-up of EUT, e.g. by photos or sketches:

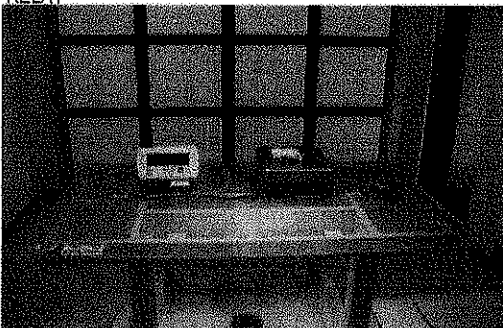
RS232C



USB



RELAY



13. DAMP HEAT,STEADY STATE (B.2.2)

a)Initial test(at reference temperature)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 22-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	20.1		20.2	°C
Rel.h	51.1		51.7	%
Time	7:40	7:41	7:42	
Bar.pres				hPa

(only class  $\text{D}$ )

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$E = \pm 1/2e - \Delta L - L$

$E_c = E - E_0$  with  $E_0$ =error calculated at or near zero(\*)

Load (L) kg	Indication (I) count		Add.load ( $\Delta L$ ) g		Error (E) g		Corrected error ( $E_c$ ) g		mpe g
	↓	↑	↓	↑	↓	↑	↓	↑	
(*) 0	-4	-4			-2.0	-2.0	0.0	0.0	5
0.2	396	396			-2.0	-2.0	0.0	0.0	5
5	9997	9996			-1.5	-2.0	0.5	0.0	5
15	29995	29998			-2.5	-1.0	-0.5	1.0	10
20	39994	39995			-3.0	-2.5	-1.0	-0.5	10
30	59998	59998			-1.0	-1.0	1.0	1.0	15

PASSED       FAILED

Remarks:

DAMP HEAT, STEADY STATE (cont.)

b) Test at high temperature and 85% relative humidity

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 25-Jul-11  
 Observer: Fukuda  
 Verification  
 scale interval e: 0.01 kg  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	39.9		39.9	°C
Rel.h	85.6		84.5	%
Time	7:44	7:46	7:47	
Bar.pres				hPa
(only class $\text{D}$ )				

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$E = | +1/2e - \Delta L - L |$   
 $E_c = E - E_o$  with  $E_o = \text{error calculated at or near zero} (*)$

Load (L) kg	Indication (I)		Add. load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	20	20			10.0	10.0	0.0	0.0	5
0.2	421	421			10.5	10.5	0.5	0.5	5
5	10021	10023			10.5	11.5	0.5	1.5	5
15	30022	30019			11.0	9.5	1.0	-0.5	10
20	40022	40022			11.0	11.0	1.0	1.0	10
30	60024	60024			12.0	12.0	2.0	2.0	15

PASSED       FAILED

Remarks:

DAMP HEAT, STEADY STATE (cont.)

c) Final test (at reference temperature)

Application N°: 23-010  
 Pattern designation: SE-30KBM  
 Date: 25-Jul-11  
 Observer: Otani  
 Verification  
 scale interval e: 0.01 g  
 Resolution during test 1count=  
 (smaller than e): 0.5 g

	At start	At max	At end	
Temp.	20.1		20.1	°C
Rel.h	53.1		53.4	%
Time	15:01	15:03	15:05	
Bar.pres				hPa
(only class $\text{D}$ )				

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

$E = I + 1/2e - \Delta L - L$

$E_c = E - E_0$  with  $E_0 = \text{error calculated at or near zero} (*)$

Load (L) kg	Indication (I)		Add. load ( $\Delta L$ )		Error (E)		Corrected error ( $E_c$ )		mpe g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g	
0	12	12			6.0	6.0	0.0	0.0	5
0.2	412	412			6.0	6.0	0.0	0.0	5
5	10012	10012			6.0	6.0	0.0	0.0	5
15	30009	30007			4.5	3.5	-1.5	-2.5	10
20	40009	40008			4.5	4.0	-1.5	-2.0	10
30	60011	60011			5.5	5.5	-0.5	-0.5	15

PASSED       FAILED

Remarks:

**14.SPAN STABILITY(B.4)**

Application N°: 23-010  
 Pattern designation: SE-30KBM

Verification scale  
 interval e: 0.01 kg

Resolution during test 1count=  
 (smaller than e): 0.5 g

Automatic zero-setting and zero-tracking device is:

Non-existent       Not in operation  
 Out of working range       In operation

Test load=  kg

Measurement No1: Initial measurement

Date: 15-Jul-11  
 Observer: Otani/Yamada  
 Location: 023

	At start	At max	At end	
Temp.	24.6			°C
Rel.h	55.4			%
Time	09:20			
Bar.pres	1010.5			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(*)
1	0		0.0	60000		0.0	0.0	
2	0		0.0	60002		1.0	1.0	
3	-1		-0.5	60001		0.5	1.0	
4	-1		-0.5	60001		0.5	1.0	
5	-1		-0.5	60001		0.5	1.0	

(\*)When applicable,necessary corrections resultingf from variations of temperature, pressure,etc..See remarks.

Average error = average(E<sub>L</sub>-E<sub>0</sub>) =  g

(E<sub>L</sub>-E<sub>0</sub>)max-(E<sub>L</sub>-E<sub>0</sub>)min =  g

0.1e =  g

If | (E<sub>L</sub>-E<sub>0</sub>) max-(E<sub>L</sub>-E<sub>0</sub>)min | ≤ 0.1e,the loading and reading will be sufficient for each of the subsequent measurements;if not,five loadings and readings shall be performed at each measurement.

Remarks:

SPAN STABILITY(cont.)

Subsequent measurements

For each of subsequent measurements(at least 7), indicate on the line"condition of measurement", as appropriate, if the measurement has been performed:

- after the temperature test, the EUT having been stabilized for at least 16h;
- after the humidity test, the EUT having been stabilized for at least 16h;
- after the EUT has been disconnected from the mains for at least 8h and then stabilized for at least 5h;
- after any change in the test location;
- under any other specific condition.

Measurement No2

Date: 19-Jul-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	24.7			°C
Rel.h	62.2			%
Time	07:38			
Bar.pres	1005.7			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(★)
	3		1.5	60003		1.5	0.0	

(★)When applicable,necessary corrections resulting from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average(E<sub>L</sub>-E<sub>0</sub>) =  g

Remarks:



SPAN STABILITY(cont.)

Measurement: No 3

Date: 20-Jul-11  
 Observer: Fukuda/Otani  
 Location: 023

	At start	At max	At end	
Temp.	23.8			°C
Rel.h	36.2			%
Time	13:10			
Bar.pres	993.2			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add. load (ΔL) g	$E_0$ g	Indication of load count	Add. load (ΔL) g	$E_L$ g	$E_L - E_0$ g	Corrected value(★)
	-3		-1.5	59997		-1.5	0.0	

(★)When applicable,necessary corrections resultingf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average( $E_L - E_0$ ) =  g

Remarks:

Measurement: No 4

Date: 21-Jul-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	24.4			°C
Rel.h	45.9			%
Time	7:24			
Bar.pres	1001.2			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add. load (ΔL) g	$E_0$ g	Indication of load count	Add. load (ΔL) g	$E_L$ g	$E_L - E_0$ g	Corrected value(★)
	4		2.0	60005		2.5	0.5	

(★)When applicable,necessary corrections resultingf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average( $E_L - E_0$ ) =  g

Remarks:

SPAN STABILITY(cont.)

Measurement: No.5

Date: 22-Jul-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	20.1			°C
Rel.h	51.1			%
Time	7:39			
Bar.pres	1005.6			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(*)
	-4		-2.0	59997		-1.5	0.5	

(\*)When applicable,necessary corrections resultinf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average(E<sub>L</sub>-E<sub>0</sub>) = 0.5 g

Remarks:

Measurement: No 6

Date: 26-Jul-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	20.1			°C
Rel.h	49.5			%
Time	7:20			
Bar.pres	1011.3			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(*)
	13		6.5	60014		7.0	0.5	

(\*)When applicable,necessary corrections resultinf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average(E<sub>L</sub>-E<sub>0</sub>) = 0.5 g

Remarks:

SPAN STABILITY(cont.)

Measurement: No.7

Date: 29-Jul-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	23.5			°C
Rel.h	65.5			%
Time	7:20			
Bar.pres	1003.2			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(*)
	23		11.5	60025		12.5	1.0	

(\*)When applicable,necessary corrections resultngf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average(E<sub>L</sub>-E<sub>0</sub>) = 1.0 g

Remarks:

Measurement: No 8

Date: 4-Aug-11  
 Observer: Fukuda  
 Location: 023

	At start	At max	At end	
Temp.	24.1			°C
Rel.h	38.2			%
Time	13:13			
Bar.pres	1010.7			hPa

$E_0 = I_0 + 1/2e - \Delta L_0 - L_0$        $E_L = I_L + 1/2e - \Delta L - L$

	Indication of zero count	Add.load (ΔL) g	E <sub>0</sub> g	Indication of load count	Add.load (ΔL) g	E <sub>L</sub> g	E <sub>L</sub> -E <sub>0</sub> g	Corrected value(*)
	32		16.0	60035		17.5	1.5	

(\*)When applicable,necessary corrections resultngf from variations of temperature, pressure,etc..See remarks.

If five loadings and readings have been performed:

Average error = average(E<sub>L</sub>-E<sub>0</sub>) = 1.5 g

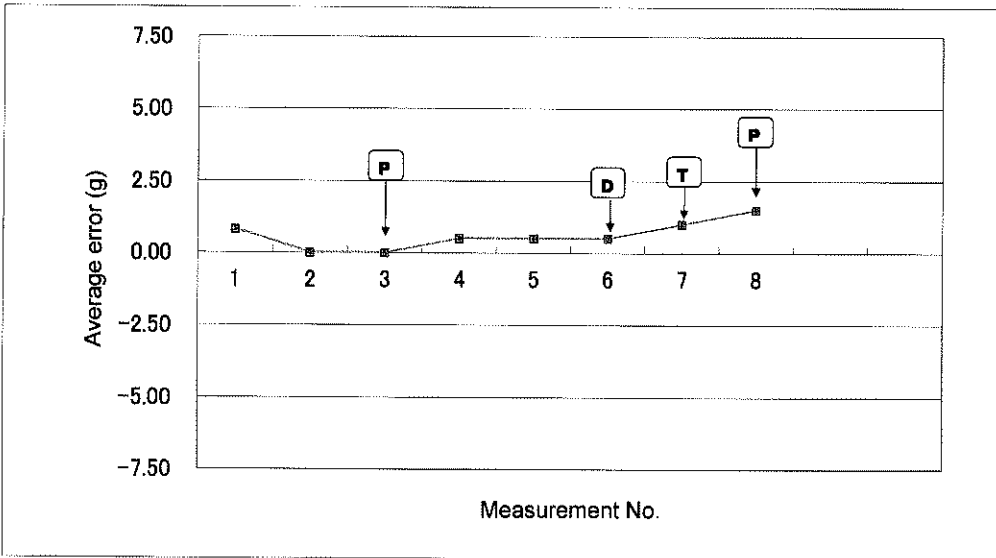
Remarks:

14 SPAN STABILITY(B.4.)

Application No: 23-010

Pattern designation: SE-30KBM

Plot on the diagramme the indication of temperature test T,damp heat test D, and disconnections from the mains power supply P



Maximum Allowable Variations:  : 0.5e  g

(MAV)  : 0.5mpe  g

Check if Average error MAV(No.1-8)  $\leq$  0.5mpe  g

PASSED  FAILED

Remarks:

15.ENDURANCE TEST (A.6.)

Application N°: 23-010  
 Pattern designation: SE-30KBM

Verification scale  
 interval e: 0.01 kg

Resolution during test 1count=  
 (smaller than e): 0.5 g

Automatic zero-setting and zero-tracking device is:

Non-existent                       Not in operation  
 Out of working range             In operation

a) Initial test

Date: 4-Aug-11  
 Observer: Fukuda

	At start	At max	At end	
Temp.	24.0		24.0	°C
Rel.h	37.9			%
Time	13:17	13:18	13:19	
Bar.pres	1010.6		1010.6	hPa

(if applicable )

$E = | +1/2e - \Delta L - L$

$E_c = E - E_o$  with  $E_o$ =error calculated at or near zero(+)

Load (L) kg	Indication (I) count		Add.load (ΔL) g		Error (E) g		Corrected error (E <sub>c</sub> ) g		mpe g
	↓	↑	↓	↑	↓	↑	↓	↑	
0	32	32			16.0	16.0	0.0	0.0	5
0.2	432	432			16.0	16.0	0.0	0.0	5
5	10033	10033			16.5	16.5	0.5	0.5	5
15	30033	30033			16.5	16.5	0.5	0.5	10
20	40030	40030			15.0	15.0	-1.0	-1.0	10
30	60033	60033			16.5	16.5	0.5	0.5	15

PASSED                       FAILED

Remarks:

**ENDURANCE TEST (cont.)**

b) Performance of the test

Number of loadings :

Load applied :  kg

c) Final test

Date: 11-Aug-11  
 Observer: Otani

	At start	At max	At end	
Temp.	24.9		25.0	°C
Rel.h	55.5			%
Time	15:05	15:07	15:09	
Bar.pres	999.6		999.6	hPa

(if applicable )

$E = | +1/2e - \Delta L - L$

Ec = E - Eo with Eo = error calculated at or near zero (\*)

Durability error due to wear and tear = Ec initial - Ec final (\*\*)

Load (L) kg	Indication (I)		Add.load (ΔL)		Error (E)		Corrected error (Ec)		mpe g	Durability Error due to wear and Tear (**) g
	↓ count	↑ count	↓ g	↑ g	↓ g	↑ g	↓ g	↑ g		
0	0	0			0.0	0.0	0.0	0.0	5	0.0
0.2	400	400			0.0	0.0	0.0	0.0	5	0.0
5	10000	10002			0.0	1.0	0.0	1.0	5	0.5
15	30001	29997			0.5	-1.5	0.5	-1.5	10	2.0
20	40001	39999			0.5	-0.5	0.5	-0.5	10	1.5
30	60005	60005			2.5	2.5	2.5	2.5	15	2.0

PASSED

FAILED

Remarks:

## 16 EXAMINATION OF THE CONSTRUCTION OF THE INSTRUMENT

Use this page to indicate any description or information pertaining to the instrument, additional to that already contained in this report and in the accompanying national pattern approval or OIML certificate. This may include a picture of the complete instrument, a description of its main components, and any remark which could be useful for authorities responsible for the initial or subsequent verification of individual instruments built according to the pattern. It may also include references to the manufacturer description.

Description :

The SE-30KBM instruments described in Japanese type approval certificate.

Japanese type approval number : D1146





Remarks :

## 17 CHECKLIST

Application No: 23-010

Pattern designation: SE-30KBM

## 17.1 All types of weighing instruments except non-self-indicating instruments (6.1-6.9, R 76-1)

Requirement	Testing procedures		PASSED	FAILED	Remarks
<b>Descriptive markings</b>					
7.1.1	A.3	<b>Compulsory in all cases:</b>			
		manufacturer's mark or name	x		
		accuracy class	x		
(+3.3.1)		maximum capacity, Max, Max <sub>1</sub> , Max <sub>2</sub> ...	x		
		minimum capacity, Min	x		
(+3.3.1)		verification scale interval, e, e <sub>1</sub> , e <sub>2</sub> ...	x		
7.1.2	A.3	<b>Compulsory if applicable:</b>			
		name or mark of manufacturer's agent	/	/	
		serial number	x		
		identification marks on separate but associated units	/	/	
		pattern approval mark	---	---	Impossible to confirm now
		scale interval d (d < e)	/	/	
		maximum tare effect T (subtractive tare only if T ≠ Max)	/	/	
		maximum safe load, Lim (if Lim > Max + T)	/	/	
		special temperature limits	/	/	
		counting ratio	/	/	
		ratio between weight platform and load platform	/	/	
		range of plus/minus indication	/	/	
7.1.3	A.3	<b>Additional markings:</b>			
		not to be used for direct sales to the public	/	/	
		to be used exclusively for:	/	/	
		the stamp does not guarantee/guarantees only...	/	/	
		to be used only as follows:	/	/	
3.2		special applications clearly marked (weighing ranges in Classes  and  or  and  )	/	/	
4.16		near display "not to be used for direct sales to the public" (for instruments similar to those used for direct sales to the public)	/	/	
7.1.4	A.3	<b>Presentation of markings:</b>			
		indelible	x		
		easily readable	x		
		grouped together in a clearly visible place	x		
		Max, Min, e and d (d ≠ e) near display	x		
		possible to seal and apply a control mark/removal will result in destruction	/	/	
7.1.5.1	A.3	<b>Instruments with several load receptors and load measuring devices:</b>			
		identification mark, Max, Min and e of each load receptor on relating load measuring device (Lim and T = + if applicable)	/	/	



7.1.5.2	A.3	<b>Separately-built main parts:</b>			
		identification mark repeated in descriptive markings	/	/	
4.1.1.3		<b>Identification of devices:</b>			
		which have been subject to separate type examination	/	/	
<b>Verification marks and sealing</b>					
7.2.1	A.3	<b>Verification mark:</b>			
		cannot be removed	---	---	Impossible to confirm now
		easy application	---	---	
		visibility without the instrument to be moved when it is in service	---	---	
7.2.2		<b>Verification mark support or space:</b>			
		which ensures conservation of the mark	---	---	Impossible to confirm now
		for stamp, stamping area $\geq 200 \text{ mm}^2$	---	---	
		for self-adhesive type, $\varnothing \geq 25 \text{ mm}$	---	---	
4.1.2.4	A.3	<b>Securing/sealing:</b>			
		location	x		
		form	x		
		evidence, where software means are used	/	/	
4.1.2.5		<b>Span adjustment device (automatic and semi-automatic):</b>	Existing	<input checked="" type="checkbox"/>	Non-existent <input type="checkbox"/>
		external influence impossible after sealing	x		
4.1.2.6		<b>Gravity compensation:</b>	Existing	<input checked="" type="checkbox"/>	Non-existent <input type="checkbox"/>
		external influence on or access to impossible after sealing	x		
8.2.1.1	A.1	<b>Technical information and data:</b>			
5.3.6.1	A.1	specific declaration of the manufacturer	/	/	
		specifications of modules	/	/	
		specifications of components	x		
3.5.4.2	A.1	fractions $P_i$ (modules tested separately)	/	/	
8.2.1.2	A.1	drawings	x		
		functional description	x		
		technical description with schematic diagrams for internal processing and exchange via interface	/	/	
5.3.7		manufacturer's lower limit of battery voltage	x		
8.2.2	A.2	<b>Examination of:</b>			
		documents	x		
		functions (spot-checks)	x		
		test reports from other authorities	/	/	
<b>Indicating device</b>					
4.2.1		<b>Reading:</b>			
4.3.1		reliable, easy and unambiguous	x		
		overall inaccuracy $\leq 0.2 e$ (analogue indication)	/	/	
		size, shape and clarity	x		
		by simple juxtaposition	x		
4.2.2.1	A.3	<b>Units of:</b>			
		mass	x		
		price	/	/	

4.2.2.1		<b>Form of indications:</b>			
		for one indication, one unit of mass	x		
		scale interval in the form $(1,2 \text{ or } 5) \times 10^k$	x		
4.2.2.2		<b>Form of digital indication:</b>			
		at least one figure at right	x		
		<b>Decimal sign:</b>			
		shall maintain its position (scale interval changed automatically)	/	/	
		separate at least one figure to the left and all to the right	x		
		<b>Zero:</b>			
		indication of zero figures	x		
		only one non-significant zero to the right	/	/	
		for values with decimal sign, non-significant zero only in third position	/	/	
4.2.3		<b>Limits:</b>			
		preventing of indication above $\text{Max} + 9 e$	x	+8e	
4.2.4		<b>"Approximate" Indication:</b> Existent <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>			
		scale interval $> \text{Max}/100$ without being smaller than $20 e$	/	/	
4.2.5		<b>Semi-self Indicating Instruments:</b>			
		extension of self-indication range $\leq$ self-indication capacity	/	/	
4.3.1 4.3.2 4.3.3 4.3.4		<b>Analogue indication:</b>			
		thickness and length of scale marks	/	/	
		scale spacing	/	/	
		limit of movement below zero and above capacity of self-indication	/	/	
4.3.4		damping of oscillations of indicating component	/	/	
4.4.1		<b>Changing of digital Indication:</b>			
		after change in load, previous indication not longer than 1 s	x		
4.4.3		<b>Extended digital indication:</b> Existent <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>			
		not allowed when there is a differentiated scale division	/	/	
		while pressing key or	/	/	
		at most, 5 s after manual command	/	/	
		prevention of printing	/	/	
4.4.4		<b>Digital indications other than primary indications:</b> Existent <input checked="" type="checkbox"/> Non-existent <input type="checkbox"/>			
		quantities identified by units or symbols or signs there of	x		
		weight values (not weighed) shall be clearly identified or	x		
		display only temporarily on manual command and	/	/	
		shall not be printed	/	/	
4.4.5		<b>Digital printing:</b> Existent <input checked="" type="checkbox"/> Non-existent <input type="checkbox"/>			
		clear and permanent	x		
		figures $\geq 2$ mm high	x		
		name or symbol of units	above column of values	/	/
			behind column of values	x	
		printing impossible when equilibrium not stable	x		

4.4.6		<b>Memory storage:</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>
		storage, transfer, totalizing, etc. inhibited when equilibrium not stable <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3.4.1		<b>Auxiliary indicating device (Class 1 and 2 only; not allowed on multi-interval instruments)</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/> if existent, type: rider <input type="checkbox"/> interpolation <input type="checkbox"/> complementary <input type="checkbox"/> differentiated scale division <input type="checkbox"/>
3.4.2		only to the right of decimal sign <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> $d < e \leq 10 d$ , $e = 10^k$ kg or $e = 1$ mg for class 1 with $d < 1$ mg <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<b>Differences between results</b>		
3.6.3		<b>Differences:</b> between multiple indications: $\leq mpe$ <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
		between digital indications and printout : zero <input checked="" type="checkbox"/>
3.6.4		between two results: $\leq mpe$ for same load when method of balancing changed (semi-self-indicating) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<b>Level Indicator</b> Existing <input checked="" type="checkbox"/> Non-existent <input type="checkbox"/>		
3.9.1.1		<b>Indicator:</b> fixed firmly <input checked="" type="checkbox"/> visible to the user <input checked="" type="checkbox"/> <b>Limiting value:</b> shows that maximum tilt is being exceeded <input checked="" type="checkbox"/>
<b>Zero-setting, -tracking and -indicating</b> Existing Non-existent		
		Initial zero-setting <input checked="" type="checkbox"/> <input type="checkbox"/>
		Semi-automatic zero-setting <input checked="" type="checkbox"/> <input type="checkbox"/>
		Nonautomatic zero-setting <input type="checkbox"/> <input checked="" type="checkbox"/>
		Zero-tracking <input checked="" type="checkbox"/> <input type="checkbox"/>
		Zero-indicating <input checked="" type="checkbox"/> <input type="checkbox"/>
4.5.1	A.4.2.1	<b>Effect:</b> shall not alter Max <input checked="" type="checkbox"/> <b>Overall effect of:</b> zero-setting <input checked="" type="checkbox"/> $\leq 4\%$ zero-tracking <input checked="" type="checkbox"/> $\leq 4\%$ initial zero-setting <input checked="" type="checkbox"/> $\leq 16\%$
4.5.2	A4.2.3	<b>Accuracy:</b> deviation $\leq 0.25 e$ <input checked="" type="checkbox"/> deviation $\leq 0.5 d$ (auxiliary indicating device) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
4.5.3		<b>Multiple range:</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/> effective for greater weighing range (if switching when loaded possible) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
4.5.4		<b>Control of zero-setting:</b> separate from that of tare weighing device <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <b>Semi-automatic zero-setting: functions only</b> in stable equilibrium and <input checked="" type="checkbox"/> if it cancels any previous tare operation <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

4.5.5	A.4.2.2	<b>Zero-indicating device (digital indication):</b>																							
		shows deviation $\leq 0.25 e$	x																						
		not mandatory if auxiliary indicating device or rate of zero-tracking $\geq 0.25 d/s$	/	/																					
4.5.6		<b>Automatic zero-setting:</b>																							
		operates only when equilibrium stable and	/	/																					
		indication has remained stable below zero at least 5 seconds	/	/																					
4.5.7		<b>Zero-tracking:</b>																							
		operates only when indication at zero or	x																						
		at negative net value equivalent to gross zero and	x																						
		equilibrium stable	x																						
		corrections $\leq 0.5 d/s$	/	/																					
		when operates after tare, the overall effect may be 4 % of Max	x																						
		<p style="text-align: center;"><b>Tare devices</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;">Existing</td> <td style="text-align: center;">Non-existent</td> </tr> <tr> <td>Tare weighing</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Tare balancing</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Combined zero-setting and tare balancing</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Tare indicating</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Type:</td> <td></td> <td></td> </tr> <tr> <td>Additive</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;">Subtractive <input checked="" type="checkbox"/></td> </tr> </table>				Existing	Non-existent	Tare weighing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tare balancing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Combined zero-setting and tare balancing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tare indicating	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Type:			Additive	<input type="checkbox"/>	Subtractive <input checked="" type="checkbox"/>
	Existing	Non-existent																							
Tare weighing	<input type="checkbox"/>	<input checked="" type="checkbox"/>																							
Tare balancing	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
Combined zero-setting and tare balancing	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
Tare indicating	<input checked="" type="checkbox"/>	<input type="checkbox"/>																							
Type:																									
Additive	<input type="checkbox"/>	Subtractive <input checked="" type="checkbox"/>																							
4.6.1		4.1 through 4.4 apply	x																						
4.6.2		<b>Tare weighing device:</b>																							
		$d_T = d$	/	/																					
4.6.3	A.4.6.2	<b>Accuracy:</b>																							
		better than $\pm 0.25 e$ (electronic instruments and instruments with analogue indication), $e=e_1$ for multi-interval	x																						
		better than $\pm 0.5 d$ (mechanical instruments with digital indication and instruments with auxiliary indicating device)	/	/																					
4.6.4		<b>Operation range:</b>																							
		prevention of operation at at	x																						
		or below its zero effect below	/	/																					
		prevention of operation above its maximum indicated effect	x																						
4.6.5		<b>Visibility of operation:</b>																							
		operation indicated	x																						
		net with sign "NET", "Net", "net" or complete word (digital indication)	x																						
		NET disappears if gross displayed temporarily	/	/																					
		tare value or letter "T" (mechanical adding tare)	/	/																					
4.6.6		<b>Subtracting tare:</b>																							
		prevention of use above Max or indication that capacity is reached	x																						
4.6.7		<b>Multiple range:</b>																							
		operation effective in greater weighing ranges if switching when loaded possible	/	/																					
4.6.8		<b>Semi-automatic or automatic tare:</b>																							
		operation only in stable equilibrium	x																						

4.6.9	<b>Combined zero/tare:</b>		
	accuracy (4.5.2)	x	
	zero-indicating device (4.5.5)	x	
	zero-tracking (4.5.7)	x	
4.6.10	<b>Consecutive tare operations:</b>		
	indicated or printed tare weight values clearly designated (if tare devices operative at the same time)	/	/
4.6.11	<b>Printing net or gross:</b>		
	without designation	x	
	designation: by G or B (gross)	/	/
	by N (only net printed)	/	/
	designation of net and tare by N and T (if net printed with gross and/or tare)	/	/
	instead of G, B, N and T, complete words	/	/
	printing separately net and tare with identification (different tare devices)	/	/
<b>Preset tare</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>			
4.7.1	$d_T = d$ or automatically rounded to $d$	/	/
	transferred from one range to another one with larger $e_n$ , shall be rounded to the latter (multiple range)	/	/
	tare value $\leq Max_1$ for the same net weight value (multi-interval) and calculated net value rounded to the scale interval for the same net weight value	/	/
4.7.2	4.6.10 applies	/	/
	cannot be modified/cancelled if tare operated after the preset tare is still in use	/	/
4.7.3	operates automatically if clearly identified with load	/	/
	4.6.5 applies	/	/
	possibility to indicate preset tare	/	/
	if calculated net printed then preset tare value is printed as well	/	/
	4.6.11 applies	/	/
	designation of preset tare by PT or complete word	/	/
<b>Locking devices</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>			
4.8.1	<b>Positions:</b>		
	only two stable positions	/	/
4.8.2	weighing only in "weigh" position	/	/
	positions clearly shown	/	/
<b>Multiple range</b> Existing <input type="checkbox"/> Non-existent <input checked="" type="checkbox"/>			
4.10	<b>Weighing ranges:</b>		
	range in operation clearly indicated	/	/
	selection from smaller to greater range possible at any load (manual)	/	/
	selection from smaller to the following greater range (automatic) possible only for load $\geq Max_1$ of smaller range	/	/
	selection from a greater to a smaller range only when no load (manual)*	/	/
	selection only from a greater to the smallest range only when no load (automatic)*	/	/
	when no load tare cancelled and to $\pm 0.25 e_1$ both automatically (manual and/or automatic selection) (applicable only to the two above requirements marked *)	/	/

Selection between load receptors, transmitting and measuring devices		Existent	<input type="checkbox"/>	Non-existent	<input checked="" type="checkbox"/>
4.11		compensation for unequal no-load effect	/	/	
4.11.1		zero-setting without ambiguity and in accordance with 4.5	/	/	
4.11.2		weighing impossible while selection	/	/	
4.11.3		combinations easy identifiable	/	/	
4.11.4					
<b>Load cells</b>			Existent	<input checked="" type="checkbox"/>	Non-existent
4.12.1		$E_{max} \geq Q \cdot Max \cdot R/N$	/	/	
4.12.2		$n_{Lc} \geq n$	/	/	
		$n_{Lc} \geq n_i$ (multiple range/multi-interval)	/	/	
	multi-interval	DR $\leq 0.5 e_1 R/N$ or $n_{Lc} \geq Max_r/e_1$ if DR unknown	/	/	
	multiple range	DR $\leq e_1 R/N$ or $n_{Lc} \geq 0.4 Max_r/e_1$ if DR unknown	/	/	
4.12.3		$V_{min} \leq e R/\sqrt{N}$ (e = e <sub>1</sub> , multiple range/multi-interval)	/	/	
<b>"Plus" and "minus" comparator Instruments</b>					
4.13.1		<b>Distinction of zones:</b>			
		by "+" and "-" signs (analogue indication)	/	/	
		by inscription (digital indication)	/	/	
4.13.2		<b>Scale:</b>			
		with at least one scale division d = e on either side of zero and	/	/	
		value of d = e shown at either end	/	/	
<b>Mechanical counting Instruments with unit weigh receptor</b>					
4.18.1		<b>Scale:</b>			
		with at least one scale division d = e on either side of zero and	/	/	
		value of d = e shown on the scale	/	/	
4.18.2		<b>Counting ratio:</b>			
		shown clearly above each counting platform or	/	/	
		each counting scale mark	/	/	

## 17.2 Instruments for direct sales to the public and price computing and labelling instruments

Requirement	Testing procedures		PASSED	FAILED	Remarks
<b>Miscellaneous checkings (direct sales to the public)</b>					
4.5.4		<b>Combined semi-automatic zero-setting device and semi-automatic tare-balancing device operated by the same key:</b>			
		not allowed	/	/	
4.8.1		<b>"Preweight" position:</b>			
		not allowed	/	/	
4.14.10		<b>Counting ratio:</b>			
		1/10 or 1/100 (mechanical counting instrument)	/	/	
4.14.5		<b>Impossibility of weighing during:</b>			
		locking operation	/	/	
		adding or subtracting weights	/	/	
4.14.7		<b>Auxiliary and extended indicating device:</b>			
		not allowed	/	/	
4.14.9		<b>When significant fault has been detected (electronic instruments):</b>			
		visible or audible alarm provided for customer and (1)	/	/	
		data transmission prevented (1)	/	/	
		until user takes action or cause disappears	/	/	
<b>Indication device (direct sales to the public)</b>					
4.14.6		<b>Primary indications (4.14.1) to both vendor and customer:</b>			
		Double display: Existing <input type="checkbox"/> Non-existent <input type="checkbox"/>			
		weight	/	/	
		information about correct zero position	/	/	
		tare operation	/	/	
		preset tare operation	/	/	
		<b>Figures of primary indications:</b>			
		same dimension and	/	/	
		high $\geq$ 9.5 mm (digital devices)	/	/	
		<b>Instruments to be used with weights:</b>			
		value of weights possible to distinguish	/	/	
<b>Zero-setting device (direct sales to the public)</b>					
4.14.2		<b>Non-automatic zero-setting:</b>			
		with tool only	/	/	

(1) Checked by verifying the compliance with documents [ ] or by simulating faults [ ]; this check does not duplicate the disturbance tests 12.1 through 12.4.

<b>Tare device</b> (direct sales to the public)			
4.14.3		<b>Tare on mechanical instrument with weights receptor:</b>	
		not allowed	/ /
		<b>Public is allowed to see whether tare:</b>	
		is in use	/ /
		setting is altered	/ /
		only one tare may be in operation at any given time	/ /
		<b>Recalling gross value:</b>	
	with tare or preset tare in operation prohibited	/ /	
4.14.3.1		<b>Non-automatic tare:</b>	
	displacement of 5 mm at most e	/ /	
4.14.3.2		<b>Semi-automatic tare:</b>	
		reduction of value of tare not permitted and	/ /
		cancelling of tare effect only if no load on the receptor	/ /
		<b>One of the following conditions fulfilled:</b>	
		tare value indicated permanently in a separate display	/ /
		indicated with sign "-" when no load on the receptor	/ /
	effect cancelled automatically when unloading after net weighing	/ /	
4.14.3.3		<b>Automatic tare:</b>	
	not allowed	/ /	
4.14.4		<b>Preset tare:</b>	
		indicated on separate display clearly differentiated from weight display	/ /
		reduction of tare value not permitted and	/ /
		cancelling of tare effect only if no load on the receptor	/ /
		impossible to operate if tare device in operation	/ /
		cancelled at the same time as PLU if associated with PLU	/ /
<b>Price computing instruments and price scales</b> (direct sales to the public)			
4.15.1		<b>Visible to both vendor and customer (4.14.6):</b>	
		unit price	/ /
		price to pay	/ /
		if applicable number, unit price and price to pay for non-weighed articles, price totals	/ /
4.15.2 4.2 4.3.1-4.3.3		<b>Price scales:</b>	
		4.2 and 4.3.1 through 4.3.3 apply to unit price and price to pay scales	/ /
		error of price scale $ W \cdot U - P  \leq e \cdot U$	/ /
4.15.3		<b>Price computing:</b>	
		multiplication of weight and unit price as indicated	/ /
		rounding to nearest interval of price to pay	/ /
		unit price: Price / (100 g or kg)	/ /
		<b>Indications of weights, unit price and price to pay visible:</b>	
		for at least 1 s after stable weight indication after any introduction of unit price and while load on load receptor	/ /
		freezing for $\leq 3$ s and not possible to introduce or change unit price (if indication has been stable before and would otherwise be zero)	/ /
		printing weight, unit price and price to pay	/ /



		<b>Stored in memory:</b>			
		before printing	/	/	
		same data not to be printed twice for customer	/	/	
4.15.4		<b>Additional functions for trade and management:</b>			
		if all transactions are printed for customer and shall not lead to confusion	/	/	
4.15.4.1		<b>Prices-to-pay (positive or negative) of non-weighed articles:</b>			
		weight indication zero or	/	/	
		weighing mode inoperative	/	/	
		prices shall be shown on price-to-pay display	/	/	
		<b>Prices for more than one equal articles:</b>			
		number of articles shown on weight or supplementary display and without being taking for a weight and	/	/	
		article price shown on unit price or supplementary display	/	/	
4.15.4.2		<b>Totalization of transactions on one or several tickets:</b>			
		price total indicated on price-to-pay display and	/	/	
		printed accompanied by a special word or symbol and	/	/	
		reference to commodities whose prices are totalized if a separate ticket is issued for total	/	/	
		all price-to-pay shall be printed and price total shall be the algebraic sum of these prices	/	/	
		<b>Totalization of transactions from linked instruments:</b>			
		price-to-pay scale intervals of all connected instruments identical	/	/	
4.15.4.3		<b>Instrument used by several vendors or to serve more than one customer at the same time:</b>			
		connection between transactions and vendor or customer identified	/	/	
4.15.4.4		<b>Cancelling previous transactions:</b>			
		price-to-pay cancelled shall be printed with comment (transaction already printed)	/	/	
		transaction clearly differentiated from normal transactions (transaction displayed to customer)	/	/	
4.15.4.5		<b>Printing additional information:</b>			
		clearly correlated to transaction and	/	/	
		does not interfere with assignment of weight value to unit symbol	/	/	
4.15.5		<b>Self-service instruments:</b>			
		designation of product	/	/	
<b>Price labelling Instruments</b>					
4.17		<b>Display:</b>			
		for weight	/	/	
		possibly to verify values of unit price and preset tare during the use of the instrument	/	/	
		<b>Printing:</b>			
		prevention of printing below Min	/	/	
		labels with fixed values of weight, unit price and price-to-pay allowed provided weighing mode made inoperative	/	/	

## 17.3 Electronic weighing instruments

Requirement	Testing procedures		PASSED	FAILED	Remarks
<b>Disturbances</b>					
5.1.1		not confusing with other messages that appear in the display	/	/	
5.2		<b>Acting upon significant faults in case 5.1.1,b):</b>			
		instrument made automatically inoperative (1), or	/	/	
		visual or audible indication until user takes action or fault disappears (1)	/	/	
<b>Display check</b>					
5.3.1		<b>Upon switch-on:</b>			
		signs of indication are active and non-active long enough to be checked by operator	x		
<b>External equipment</b>					
5.3.6		<b>Interface shall not allow:</b>			
		- functions and measuring data to be inadmissibly influenced by peripheral devices or other connected instrument or disturbance	x		
5.3.6.1		- displaying data which could be mistaken for weighing result	x		
		- falsifying weighing results (displayed, processed, stored)	x		
		- changing adjustment factor or adjusting the instrument (except authorized cases)	x		
		- falsifying displayed primary indications (direct sales)	/	/	
5.3.6.2		need not be secured if functions in 5.3.6.1 cannot be performed or initiated	x		
5.3.6.3		shall transmit data so that peripheral device can meet requirements	x		
5.3.6		Functions performed or initiated through the interface meet relevant requirements of clause 4	x		
5.3.7		<b>Battery operated instrument: if voltage below manufacturer's specified value</b>			
		continues to function correctly or	x		
		indicates no weight	/	/	

(1) Checked by verifying the compliance with documents [ ] or by simulating faults [ ]; this check does not duplicate the disturbance tests 12.1 through 12.4.