Generalitat de Catalunya
Departament d'Indústria i Energia
Direcció General de Seguretat Industrial
Servei d'Homologacions

Av. Diagonal, 405 bis
08008 Barcelona
Telèfon (93) 484 93 00
Telefax (93) 484 94 10

TEST CERTIFICATE

Number E-96-02.C2

LOAD CELL UTILCELL TYPE 120

Issued by : Dirección General de Seguridad Industrial de la Generalidad de Cataluña
(notified body number 0315)
Avinguda de la Diagonal, 405 bis
E-08008 BARCELONA

In accordance with: Paragraph 8.1 of the European Standard "Metrological aspects of non-automatic weighing instruments" EN 45501:1992(+AC:1993). The applied error fraction p_i with reference to paragraphs 3.5.4 and 4.12 of this standard is 0,7. Following paragraph 4.12 of this standard, the tests have been performed according to the OIML International Recommendation, OIML R 60 (1991).

Issued to : Técnicas de Electrónica y Automatismos, S.A.
Carrer Espronceda, 176-180
E-08018 BARCELONA
ESPAÑA

In respect of : The model of a **load cell**, tested as part of a non-automatic weighing instrument.
manufacturer: Técnicas de Electrónica y Automatismos
type: 120.

Characteristics : accuracy class C,
number of verification scale intervals $n \leq n_{max} = 4000$

E_{max}	7,5 kg 10 kg 15 kg 20 kg 30 kg
E_{min}	0 kg
v_{min}	$0,9\ E_{max}/n_{max}$

The main characteristics are shown in the descriptive annex, which is an integral part of the test certificate and consists of 7 pages.
The type is described in the submitted technical documentation, identified with number 2/96.
The summary of tests involved can be found in the descriptive annex.

DIRECTOR GENERAL DE SEGURIDAD INDUSTRIAL

Albert Sabala i Duran

Barcelona, 13 February 1996

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Descriptive annex to test certificate number E-96-02.C2

A.1 Name and type of the instrument

Load cell type 120

Manufactured by:

Técnicas de Electrónica y Automatismos, S.A.
Carrer Espronceda, 176-180
E-08018 BARCELONA ESPAÑA

using the following mark:

UTILCELL.

A.2 Functional description

The load cell type 120 is a bending load cell, accepting eccentric loads, based on a double beam joined at the ends. The principle of measurement is that of strain gauges, as a full bridge, in an elastic element.

The load cell is clamped on the lower part and can be fixed on the load application zone.

The load cell type 120 has only one version.

Reference is made to Fig.1 and drawing MO-1004 of the submitted technical documentation.

A.3 Technical characteristics

A.3.1 Metrological characteristics

The load cell type 120 has the following metrological characteristics:

Classification symbol	: C4↓
Accuracy class	: C
Maximum number of load cell intervals n_{max}	: 4000
Direction of loading	: Bending
Maximum capacity, E_{max}	: 7,5 kg; 10 kg; 15 kg; 20 kg; 30 kg
Minimum dead load, E_{min}	: 0 kg
Minimum load cell verification interval v_{min}	: 0,9 E_{max}/n_{max}
Working temperature limits	: -10 °C to 40 °C

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A.3.2 Additional characteristics

The load cell type 120 has the following additional characteristics:

Input resistance	:	(400 ± 20) Ω
Output resistance	:	(350 ± 3) Ω
Reference excitation voltage	:	10 V (dc)
Maximum excitation voltage	:	15 V (dc or ac)
Excitation voltage limits	:	5 V to 15 V (dc or ac)
Nominal sensitivity	:	2 mV/V
Safe load limit	:	150%
Breaking load	:	> 200%
Nominal displacement	:	0,5 mm

A.4 Connections

The connection is a six-wire system, with remote sensing. The cable is shielded, with the shielding not connected to the load cell.

Reference is made to drawing EE-1001 of the submitted technical documentation.

A.5 Location of the indicacions

The indications required according to point 4.6 of OIML R 60 (1991) are found on the load cell, in the placement shown in detail in drawing SC-1001-A (in the submitted technical documentation).

A.6 Conditions for use

No property of this instrument, whether described or not, may be in conflict with the standard and international recommendation mentioned in the test certificate.

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Assaigs

The list of tests carried out to issue this test certificate is as follows:

Test

(A.2) Load cell errors (20, 40, -10, 20 °C)
(A.3) Repeatability error (20, 40, -10, 20 °C)
(A.4) Temperature effects on minimum dead load output (20, 40, -10, 20 °C)
(A.5) Creep (20, 40, -10 °C)
(A.5) Minimum dead load output return (20, 40,-10 °C)
(A.6) Barometric pressure effects
(A.7) Humidity effects

The load cell has passed all these tests.

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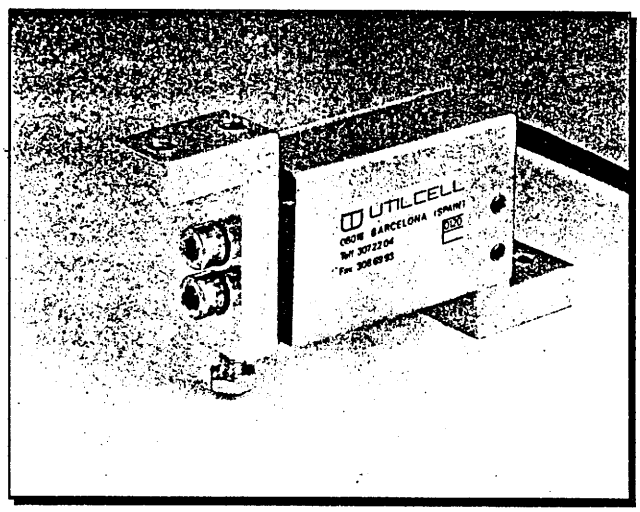
UTILCELL
CELULAS DE CARGA - LOAD CELLS

MODELO 120



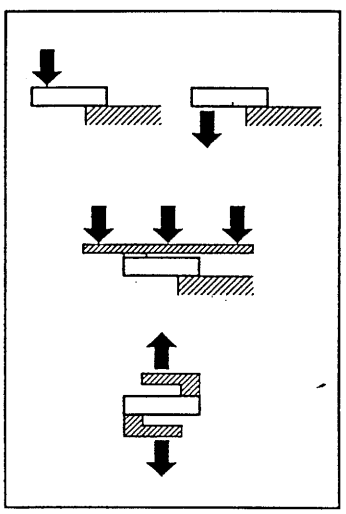
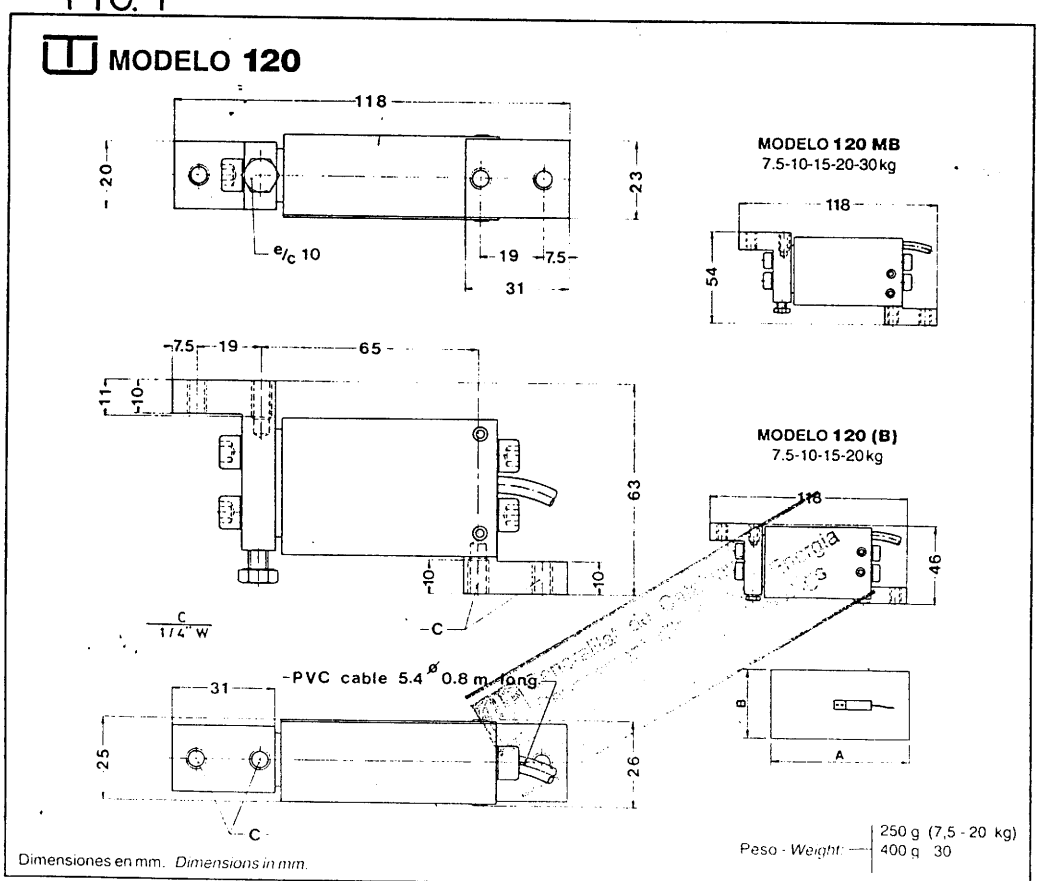


FIG. 1



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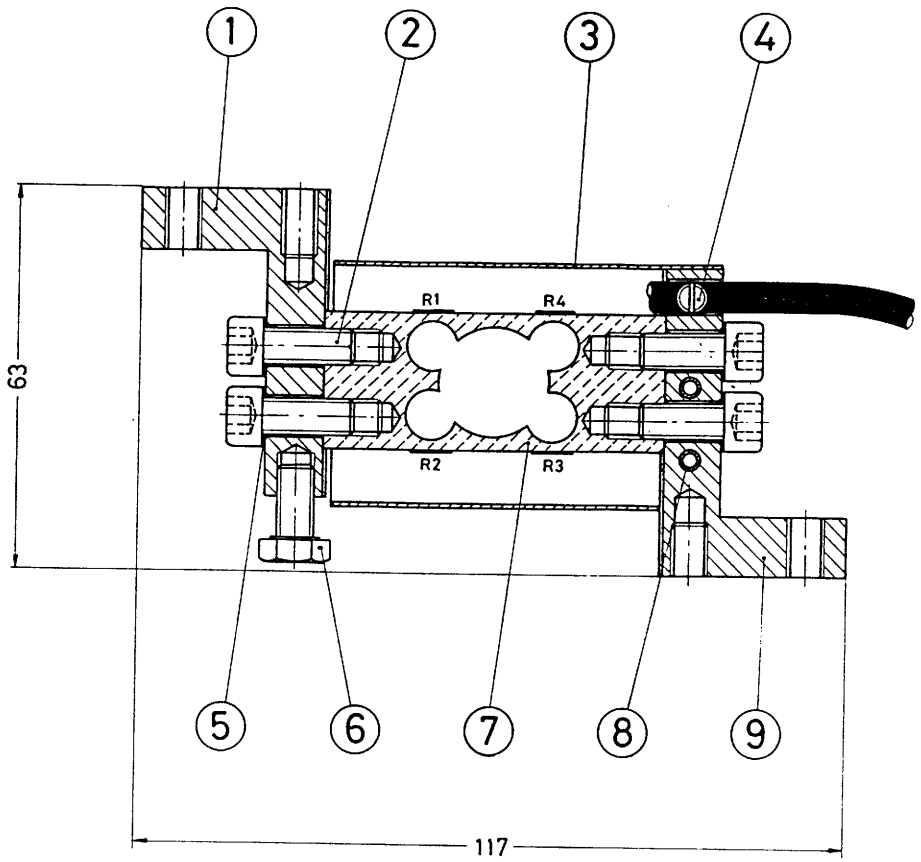

R1-R2-R3-R4 GALGAS

N.º ORDEN	N.º PLANO	N.º PIEZAS	MATERIAL	DENOMINACION
	CI-1002	1	FIBRA VIDRIO	CIRCUITO IMPRESO
9	BA-1010	1	Ac. F-114	BASE
8	RE-1002	2	LATON	REMACHE
7	NU-1004	1	CU_2Be	NUCLEO
6	TO-1008	1	Ac. ALEADO	TOR. C/EXAGONAL M·6x12
5	AR-1002	4	Ac. ALEADO	ARANDELA CONICA
4	TO-1010	1	NYLON	TORNILLO SUJECCION CABLE
3	CA-1003	1	ALUMINIO	CARCASA
2	TO-1016	4	Ac. F-125	TOR. C/ALLEN M·6x15 (12.9)
1	EL-1014	1	Ac. F-114	ELE

	NOMBRE	FECHA	MATERIAL
PROYECTADO			
DIBUJADO	NUÑEZ	24-2-87	TRATAMIENTO
VERIFICADO			

TECNICAS DE ELECTRONICA Y AUTOMATISMOS, S. A.

ESCALA	DENOMINACION	MO-1004
1:1	CJTO. CELULA DE CARGA MODELO 120	Sustituye a:
		Sustituido por:

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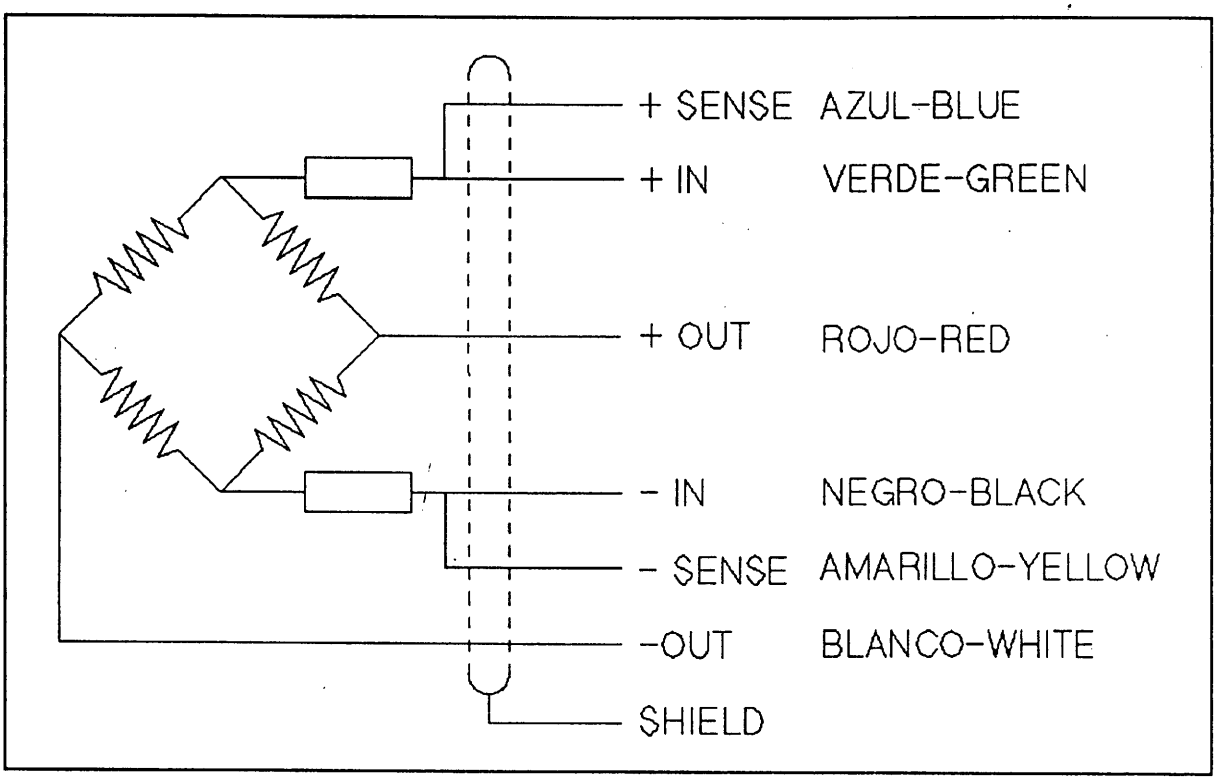
CONEXION ELECTRICA: 6 HILOS
ELECTRICAL CONNECTION: 6 WIRES



EE-1001

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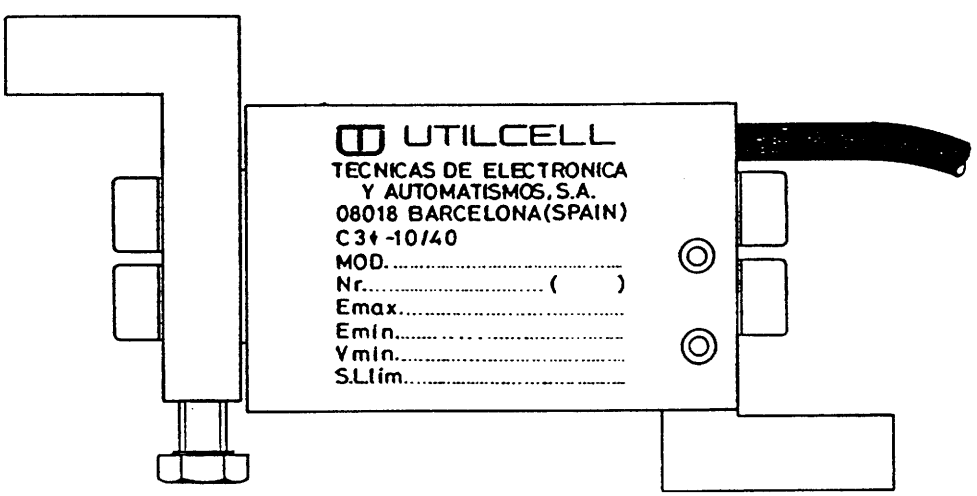
SITUACION DE LA ETIQUETA IDENTIFICATIVA

Esc. 1:1



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SC-1001-A