



Number **TC7360** revision 0
Project number 705826
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Issued by NMI Certin B.V.
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The Netherlands

Notified Body Number 0122

In accordance with Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993 and by application of the OIML International Recommendation R 60 (Edition 2000). The applied error fraction p_i , meant in the paragraph 3.5.4. of the standard is 0.7.

Applicant Laumas Elettronica S.r.l.
Via Primo Maggio n. 6
43030 Basilicanova (PR)
Italy

In respect of A **shear beam load cell**, with strain gauges, tested as a part of a weighing instrument.
Manufacturer : Laumas Elettronica S.r.l.
Type : FTK

Characteristics

Maximum capacity (E_{max})	1000 kg up to and including 5000 kg
Accuracy class	C
Maximum number of load cell verification intervals (n_{max})	3000
Ratio of minimum LC verification interval $Y = E_{max} / V_{min}$	12000

In the description number TC7360 revision 0 further characteristics are described.



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Test certificate

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Description and documentation The load cell is described in the description number TC7360 revision 0 and documented in the documentation folder TC7360-1, appertaining to this test certificate.

Remarks Summary of the test involved: see Appendix number TC7360 revision 0

Dordrecht, 28 February 2008
NMI Certin B.V.

1/0

Ing. C. Oosterman
Manager Product Certification

1 General information about the load cell

All properties of the load cell, whether mentioned or not, may not be in conflict with the standard mentioned in the test certificate.

1.1 Essential parts

Description	Drawing number	Rev.	Remarks
FTK 1000 to 2500	123	0	Mechanical
FTK 3000 to 5000	122	0	Mechanical
Bridge electrical drawing FTK	121	0	Electrical

Cable:

- The load cell is provided with a 4-wire system.
 The cable length is variable and will be mentioned on the data plate.
 The cable length shall not be modified.
- The load cell is provided with a 6-wire system (=“Remote-sensing”).
 The cable length is not limited.
- The cable should be a shielded cable, the shield is not connected to the load cell.

1.2 Essential characteristics

Minimum dead load	: 0 kg
Safe overload	: 150 % of E_{max}
Rated Output	: 2 mV/V
Input impedance	: $400 \Omega \pm 10 \Omega$
Output impedance	: $352 \Omega \pm 2 \Omega$
Recommended excitation	: 10 V DC/AC
Excitation maximum	: 15 V DC/AC
Transducer material	: Alloy Steel (40CrNiMoA)
Atmospheric protection	: welded metal cover

1.3 Essential shapes

The load cell is built according to drawing:

- FTK 1000 to 2500, drawing number 123;
- FTK 3000 to 5000, drawing number 122.

The data plate is secured against removal by sealing or will be destroyed when removed. The data plate mentions at least the information and markings as described in the OIML R60 document. In the countries where it is mandatory the load cell should bear this test certificate number: TC7360.

Securing:

The connecting cable of the load cell or the junction box is provided with possibility to seal.

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Tests performed for this test certificate:

Test	Institute	type, version, remarks
Temperature test and repeatability (20, 40, -10 and 20 °C)	NMi Certin B.V.	FTK C3 1000 kg
Temperature effect on minimum dead load output (20, 40, -10 and 20 °C)	NMi Certin B.V.	FTK C3 1000 kg
Creep (20, 40 and -10 °C)	NMi Certin B.V.	FTK C3 1000 kg
Minimum dead load output return (20, 40 and -10 °C)	NMi Certin B.V.	FTK C3 1000 kg
Barometric pressure effects at room temperature	NMi Certin B.V.	FTK C3 1000 kg
Damp heat, cyclic: marked CH (or not marked)	NMi Certin B.V.	FTK C3 1000 kg

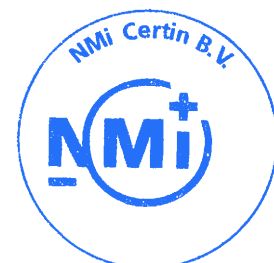


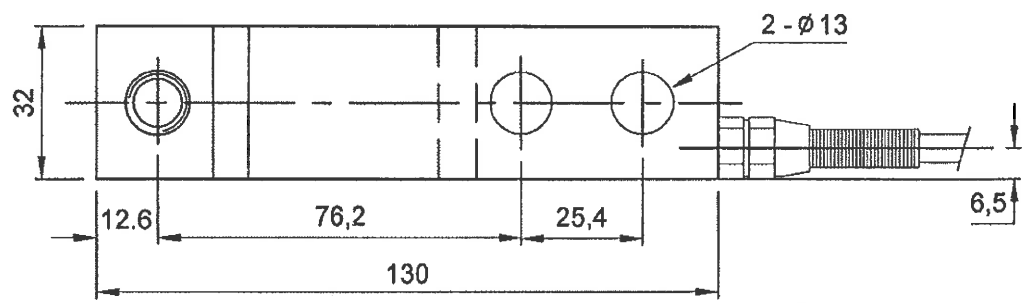
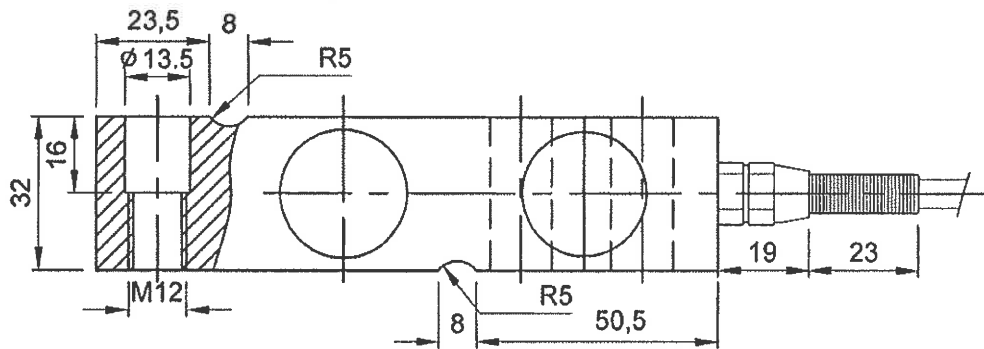
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Documentation folder

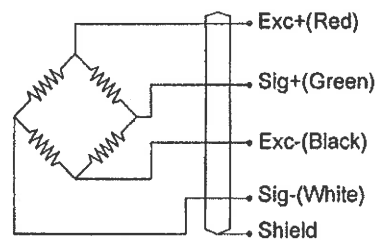
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Description	Drawing number	Rev.	Remarks
FTK 1000 to 2500	123	0	Mechanical
FTK 3000 to 5000	122	0	Mechanical
Bridge electrical drawing FTK	121	0	Electrical

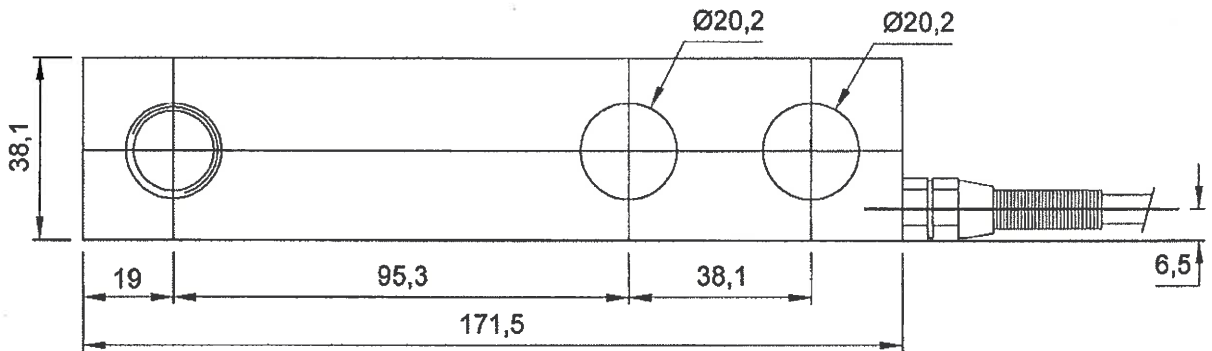
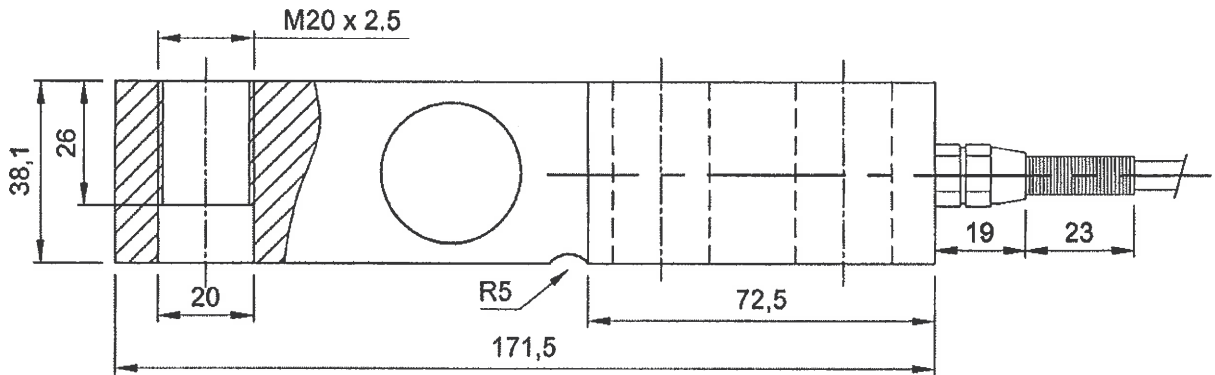




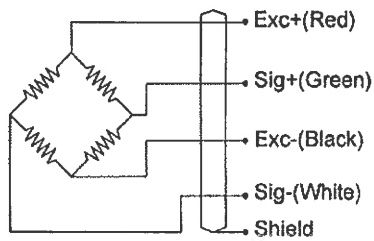
Wiring Schematic Diagram



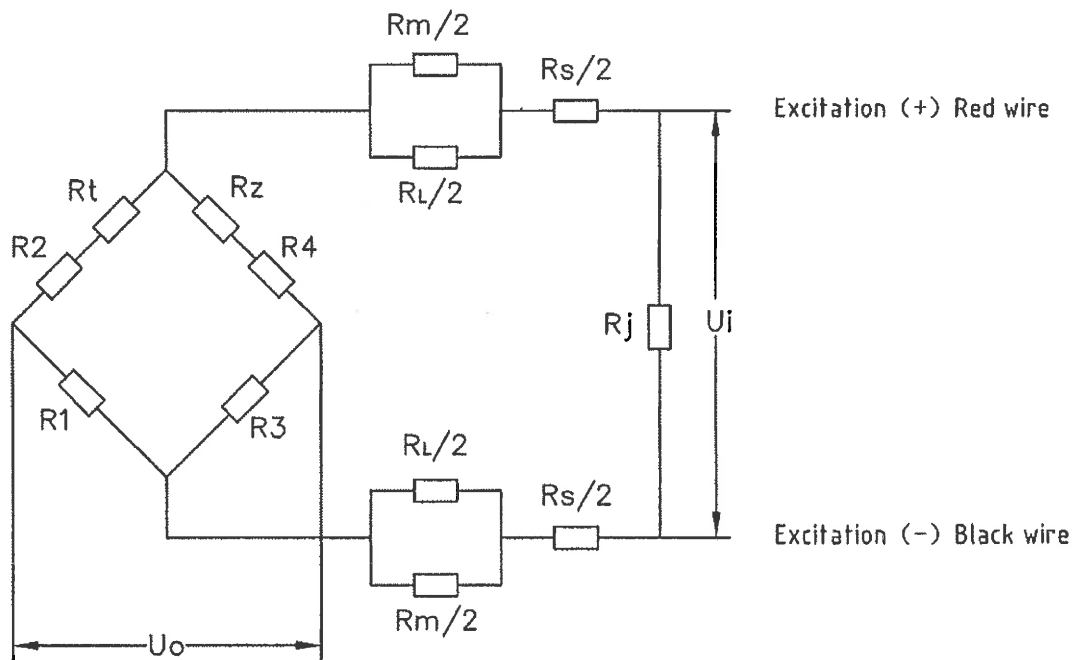
Mechanical drawing	Drawing Number	123
	Date	27/08/07
FTK 1000 to 2500	Scale	1 : 1
	Rev.	0
LAUMAS Elettronica s.r.l.	Designer	LC



Wiring Schematic Diagram



Mechanical drawing	Drawing Number	122
	Date	27/08/07
FTK 3000 to 5000	Scale	1 : 1
	Rev.	0
LAUMAS Elettronica s.r.l.	Designer	LC



Signal (-) White wire Signal (+) Green wire

Code	Name	Value	Material/Standard
R1, R2 R3, R4	Strain guage resistance	$350 \pm 0.1 \Omega$	GB/T13992-92
Rz	Zero resistance	$0 \sim 1 \Omega$	Enameled constantan wire
RL	Linearizing resistance	$76 \pm 0.1 \Omega$	Metallic-film resistor
Rm	Elastic modulus compensation resistance	$22 \pm 0.1 \Omega$	Output with temperature compensation resistance
Rs	Sensivity compensation resistance	$30 \sim 50 \Omega$	Enameled constantan wire
Rj	Input resistance compensation resistance	$0 \sim 20 \text{ k} \Omega$	Metallic-film resistor
Rt	Zero compensation resistance	$0 \sim 0.15 \Omega$	Enameled brass wire



Bridge electrical drawing	Drawing Number 121
FTK	Date 27/08/07
LAUMAS Elettronica s.r.l.	Rev. 0
	Designer LC