


# TASK BOOK


**Acquisition: *Universal Force Transducer Calibration Machine 250 kN***

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### Change history

Ver/Rev	Date (dd /mm/yyyy)	The document by which it is requested change or description of changes	The name of the person operating the change
1.0	01.02.2023	Basic document	Manea Ion
1.1			

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## 1 INTRODUCTION

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This specification is part of the assignment documentation within the project "Increasing the competitiveness of Softronic SRL by equipping it with measurement/calibration equipment and certifying the manufactured electric locomotives" financed by the Ministry of Economy through the Minimis Aid Scheme "Support granted for the implementation of the growth program of the competitiveness of industrial products".

The specification refers to the purchase of "Universal machine for calibrating force transducers 250 kN" and presents all the requirements on the basis of which each tenderer prepares his proposal.

Within the project, the SOFTRONIC SRL company fulfills the role of buyer.

## 2 CONTEXT OF MAKING THE PURCHASE

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### 2.1 INFORMATION ABOUT THE CONTRACTING AUTHORITY

#### 2.1.1 Brief introduction of the applicant

Softronic SRL was founded in Craiova-Romania in 1999 with the main purpose of modernizing locomotives and manufacturing railway safety equipment. Currently, Softronic is the leader in the field of railway rolling stock construction, being the only manufacturer of multi-unit electric trains and electric locomotives with CO-CO asynchronous motors in Southeast Europe.

#### 2.1.2 Applicant's headquarters

Softronic SRL, Craiova, Calea Severinului, no. 40, Dolj, postal code 200609, tel. 0351409151, fax 0351178948, registration code J16/61/1999, tax code RO11492278, IBAN account RO53TREZ2915069XXX000610, opened at the Treasury Craiova, e-mail:softronic@softronic.ro, <https://www.softronic.ro>


### 2.2 INFORMATION ABOUT THE CONTEXT THAT DETERMINED THE PURCHASE OF THE PRODUCTS

Within Softronic Craiova, was created the Laboratory of Calibrations and Mechanical and Climatic Tests – LEIMC (<https://limcsoftronic.ro>) with the priority purpose of covering the need for accredited / attested / authorized calibrations and tests to determine the functional performance of railway vehicles and electrical equipment, in the fields of: lengths, pressures, forces, vibrations and climate.

The project falls under category C of activities financed by the de minimis scheme: equipping and/or modernizing existing testing and calibration laboratories, as well as their accreditation.

### 2.3 INFORMATION ABOUT THE BENEFITS ANTICIPATED BY SOFTRONIC SRL

By financing the project, LEIMC-Softronic will be equipped with a Force Transducer Universal Calibrating Machine with a nominal load of 250 kN, the calibration being performed in traction and compression. This equipment ensures the calibration of working standards as well as working dynamometers and force transducers from our own equipment or external partners.

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Under the conditions of calibration in class 0, according to ISO 376, case C, using Deadweight Standards equipment, the universal force transducer calibration machine can be used for traction and compression calibration of force transducers with a nominal load of 250 kN in class 0.5 according to ISO 376.

## **2.4 THE GENERAL FRAMEWORK OF THE SECTOR IN WHICH THE CONTRACTING AUTHORITY OPERATES**

SOFTRONIC SRL is a manufacturer of multiunit electric trains and electric locomotives with CO-CO asynchronous motors with a nominal power of 6000 kW.

## **2.5 STAKEHOLDERS AND THEIR ROLE**

- SOFTRONIC SRL, acquisition beneficiary;
- Users of locomotives manufactured by Softronic;
- External beneficiaries interested in calibrating working dynamometers and traction/compression force transducers with nominal load  $\leq 250$  kN;
- Accreditation / attestation bodies in the field of force calibration.

## **3 THE REQUESTED PRODUCTS**

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### **3.1 DESCRIPTION OF THE CURRENT SITUATION AT THE LEVEL OF THE CONTRACTING AUTHORITY**


The current equipment of the Laboratory of Calibrations and Mechanical and Climatic Tests–LEIMC Softronic allows the calibration of the working dynamometers and force transducers of class  $\geq 1$  according to ISO 376

### **3.2 THE OVERALL OBJECTIVE TO WHICH THE PROVISION OF THE PRODUCTS CONTRIBUTES**

Increasing the competitiveness of the Laboratory of Calibrations and Mechanical and Climatic Tests - LEIMC within Softronic Craiova by equipping it with a Force Transducer Universal Calibration Machine with a nominal load of 250 kN, which allows for traction & compression calibrations for nominal forces of 250 kN with the international recognition of the metrological traceability of the measurements made.

### **3.3 THE SPECIFIC OBJECTIVE TO WHICH THE PROVISION OF THE PRODUCTS CONTRIBUTES**

Equipping LEIMC with a Force Transducer Universal Calibration Machine with a nominal load of 250 kN.

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### 3.4 THE REQUESTED PRODUCTS AND THE ANCILLARY OPERATIONS THAT NEED TO BE CARRIED OUT

The requirements in the specifications will be considered as minimum. In this sense, all offers that, through the technical proposal, ensure a higher level of the minimum requirements from the technical specification will be taken into consideration; product offers with technical characteristics inferior to those provided in the technical specification will be declared non-compliant.

Technical specifications indicating a particular origin, source, production, special product, manufacturing or trade mark, patent, manufacturing license are mentioned only for easy identification of the type of product and do not have the effect of favoring or the elimination of certain economic operators or certain products. These specifications will be considered as having the mention "or equivalent".

#### 3.4.1 Requested products – technical and functional characteristics

**Universal Force Transducer Calibration Machine 250 kN** consisting of:

***I. Universal calibration machine for forces in the range 0÷250 kN*** with the characteristics:

- Maximum height: 2700 mm;
- Compression area: 76 mm ÷ 575 mm;
- Traction area: 673 mm ÷ 1170 mm;
- Maximum force: 266 kN.

The universal calibration machine includes the following accessories and adaptations:


- 1 piece Jack Compression Block;
- 2 pieces Load Ball Adapter;
- 1 Lower Yoke Compression Block;
- 1 piece Tension Rod 508 mm (for small force applications);
- 1 piece Auxiliary Screw pump;
- 1 piece Two Speed Hand Pump.

***II. Electric hydraulic pump*** with the characteristics:

- electrical supply: 220 Vac.

***III. Indicator with calibration software*** with the characteristics:

- Dual-channel, channels A & B;
- Bipolar display of 6 digits ( $\pm 999,999$ ) using two lines, 20 characters;
- Loud function at any time;
- Peak load display;
- Load limiters;
- Non-linearity:  $\leq 0.005\%$ ;

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- Load cell excitation: selectable 5 Vdc or 10 Vdc;
- Sensitivity range:  $\pm 4.5$  mV/V;
- Resolution: 24 bit;
- Display units: Lbf, Kgf, N, psi, MPa, Klbf, kN, t, mV/V;
- Power supply: 220 Vac / 50 Hz;
- Communication interfaces: RS-232/RS422, RS485.

**IV. Load cell for traction & compression** with the characteristics:

- Nominal load: 300 kN;
- Non-linearity:  $\pm 0.03\%$
- Input resistance:  $350 \Omega + 40\Omega / -3.5\Omega$ ;
- Recommended supply voltage: 10 Vdc;
- Nominal sensitivity: 4 mV/V;
- Overload: max. 150%;
- Calibration certificate for the load cell in combination with the indicator in the supply (calibration in kN the cell being connected to channel A of the indicator), class 0, according to ISO 376, case C, using Deadweight equipment.

**V. Compression adapter kit for loads  $\leq 500$  kN;**

**VI. Traction adapter kit.**

### 3.4.2 Guarantee

The warranty must last for a minimum of 2 calendar years.

The warranty must cover repairs or replacements, including pick-up and return or on-site repair. The warranty must ensure that the equipment complies with the contract specifications, at no additional cost.


### 3.4.3 Delivery, packaging, labeling, transport

The equipment is considered delivered when all the activities stipulated in the contract have been carried out and the equipment is installed and operating at the agreed parameters and is accepted by SOFTRONIC SRL.

The equipment will be delivered to the address: SOFTRONIC SRL, Calea Severinului no. 40, Craiova, Dolj county, Romania.

The supplier will package and label the supplied equipment in such a way as to prevent any damage or deterioration during transport to the destination. The packaging must be designed to withstand, without limitation, accidental handling, exposure to extreme temperatures and precipitation during transport and storage in open places.

Shipping and all associated costs are the sole responsibility of the Supplier.

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The supplier is responsible for delivery within the agreed time and is considered to have taken into account all difficulties that it may encounter in this regard and will not invoke any reason for delay or additional costs.

#### **3.4.4 Installation, commissioning, testing**

There are no special requirements for installation, commissioning or testing. The supplier will make available to the beneficiary all the documentation for the installation, handling and use of the equipment, including the use of online audio and video platforms.

#### **3.4.5 Staff training for use**

The supplier is responsible for training the personnel designated by SOFTRONIC SRL. The purpose of the training is to transfer the knowledge necessary to operate the equipment. The number of people who will be trained is 4. The training will be carried out online using audio-video means.

The duration of the training session will be 8 hours and ends with a training report.

The training session will be held in Romanian or English.

During the training session, the supplier will provide support materials that include user manuals in electronic form, in Romanian or English.

#### **3.4.6 Preventive maintenance during the warranty period**

Equipment that is the subject of this Specification requires minor preventive maintenance actions. The training of the beneficiary for the application of preventive maintenance is done using online audio and video platforms.

#### **3.4.7 Post-warranty corrective maintenance**

Beneficiary training for the application of corrective maintenance is done using online audio and video platforms. Outside the warranty period, equipment that requires replacement or repair is sent to the Supplier at the Beneficiary's actual expense.

#### **3.4.8 Technical support**

During the warranty period, the Supplier will provide technical support for the efficient use of the equipment. The Supplier will respond within a maximum of 3 working days to any incident reported by the Purchaser.


#### **3.4.9 Spare parts and consumables for post-warranty corrective maintenance program activities**

The supplier will provide consumables and spare parts against cost.

#### **3.4.10 The environment in which the equipment is operated**

- The operating environment is the one requested by the technical characteristics.
- Draft-free, dust-free and vibration-free environment;
- Ambient temperature: 18 ... 28 °C.



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### 3.4.11 Constraints on the location where the installation will take place

There are no installation constraints.

## 3.5 DUTIES AND RESPONSIBILITIES OF THE PARTIES

### **SOFTRONIC SRL:**

Procurement management in accordance with legal regulations;

Quantitative and qualitative reception of the equipment;

Payment of the invoice issued by the Contractor.

### **Supplier:**

Compliance with the assumed contractual conditions;

Delivery of the equipment under the conditions established by the Specifications;

Training of the staff appointed by SOFTRONIC SRL;

## 4 DOCUMENTATION TO BE PROVIDED

The documentation that the Contractor must deliver is the user documentation for the equipment. This can be delivered on paper or in electronic format.

## 5 RECEPTION

The reception of the equipment will be carried out on the basis of the report of delivery - receipt signed by the Supplier and the Beneficiary. The reception consists of:

-The quantitative reception will be carried out after the delivery of the products in the requested quantity at the location indicated by SOFTRONIC SRL. The quantitative acceptance report will include one of the following results: Accepted or Rejected.

- Quality acceptance will be achieved after installation, commissioning and testing. The accepted equipment must correspond to the tests performed, and if it does not correspond to the tests performed, it is Rejected.


It is considered that the equipment complies with the Specifications only if the quantitative and qualitative reception has the qualification Accepted.

## 6 PAYMENT METHODS AND CONDITIONS

The supplier will issue the invoice for the contracted equipment. The invoice will include the name of the equipment, the composition of the equipment, the contract number and the due date for payment.

Payments in favor of the Supplier will be made within 30 days from the date of issuance of the tax invoice.

Advance payments and/or partial payments of the contract price are allowed.

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## **7 THE LEGAL FRAMEWORK GOVERNING THE RELATIONSHIP BETWEEN SOFTRONIC SRL AND THE CONTRACTOR (INCLUDING IN THE FIELDS OF ENVIRONMENT, SOCIAL AND LABOR RELATIONS)**

The offeror who has become a Contractor has the obligation to comply with the applicable environmental, social and labor obligations in the execution of the Contract, respectively:

- Convention no. 87 of the ILO regarding freedom of association and the protection of the right to organize;*
- Convention no. 98 of the ILO regarding the right to organize and collective bargaining;*
- Convention no. 29 of the ILO on forced labour;*
- Convention no. 105 of the ILO on the abolition of forced labour;*
- Convention no. 138 of the ILO regarding the minimum age for employment;*
- Convention no. 111 of the ILO on discrimination (employment and profession);*
- Convention no. 100 of the ILO regarding equal remuneration;*
- Convention no. 182 of the ILO regarding the worst forms of child labor;*
- The Vienna Convention on the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer.*