TERMET SA   **2.02.2018 r.**
ul. Długa 13
58-160 Świebodzice

Inquiry 8/ZIT-AW/2017

I. ORDERING PARTY

TERMET SA

 ul. Długa 13, 58-160 Świebodzice

NIP 884-16-31-476, REGON: 890346982, KRS 0000041459

II. ORDER DESCRIPTION

1. Description of the subject of the order

Four final inspection test benches on the assembly line of central heating gas boilers.

Before proceeding a test the operator has to scan the suitable bar code using bar code scanner. Based on scanned code the bench will run the appropriate test program with parameters in accordance to detected type of appliance.

The bench executes tests according to a list of tests and if the previous result is positive moves to the next test. In case of any failure during test sequence the collected data is record having a signature of failure.

Only if all test are positive the collected data can have signature of positive result.

List of tests		
#	Test name	Description
1	Gas circuit leakage test with gas	The leakages are tested by pressure drop using the gas applied at inlet. Gas type and pressure in accordance with the type of tested appliance.
2	Automatic filling of the CH and DHW circuits	The filling procedure drives out the air from the boiler and fills it with water.
3	CH circuit leakage test	The leakages are tested by pressure drop using water at the pressure regulated at water inlet of the bench (<2.5 bar).
4	DHW circuit leakage test with tap water	The leakages are tested by pressure drop using tap water at the pressure regulated at water inlet of the bench (<6 bar).
5	Check of the flow rate produced by the boiler's circulator	Measurement of the flow rate on the CH primary circuit.
6	Gas valve calibration, at maximum and minimum power.	Measurement of of CO_2% in the fumes (external analyzer), combined with the gas flow rate, both checked against predefined limits.
7	Minimum DHW flow rate for the ignition	A ramp in the flow rate on the DHW circuit is automatically produced by the bench. The bench detects

		the minimum value of flow rate able to produce the ignition.
8	3-way valve test (DHW/CH mode switching)	Establishing a sufficient flow rate on the DHW circuit, the bench checks that there is no flow rate on the CH circuit.
9	Check of lock in case of gas supply interruption	The gas inlet is closed by the software, the check of the lock is visual.
10	Check of the maximum CH thermostat	The software stops the cooling and detects the moment when the flame switches off. It checks the water primary circuit temperature at that moment.
11	Fumes safety test	The chimney is obstructed by the operator. The bench checks the switching off of the gas valve (or the operator checks the lock condition on the boiler).
12	CH circuit modulation test	The conditions for a modulation in CH mode are set on the boiler by the operator; the bench checks that the gas flow rate reduces.
13	DHW circuit modulation test	The conditions for a modulation in DHW mode are set on the boiler by the operator; the bench checks that the gas flow rate reduces.
14	Automatic draining	The boiler is automatically emptied with compressed air.
15	Electric safety tests	Ground continuity, dielectric strength and insulation tests.

The flow of gas for controlled at the bench appliance for individual mixtures according to EN 437, for the second family and the third family and the level of regulation has to be suitable to supply an appliance with a thermal power: 2.0 ÷ 50.0 kW.

The inlet pressure for the tested appliances

- second family gases: 15 to 35 mbar

- third family gases: 20 to 60 mbar

Water flow in the CO circuit ≥ 4 m3 / h, water flow in the CWU circuit up to 20l / min.

Electric power supply: 230V / 50 Hz.

Operating conditions (environment): temperature 10 - 35 °C, humidity up to 80%.

The device should be controlled from the Personal Computer.

Measurement uncertainty as specified in the Commission Communication as part of the implementation of Commission Regulation (EU) No 814/2013 (2014 / C 207/03),

for gas:

- heating value (NCV) and gross calorific value (GCV) MJ / m3:   ± 1%,

- temperature K: ± 0,5,

- pressure mbar: ± 1%,

- density dm3 / kg: ± 0.5%,

- flow rate m3 / s and l / min: ± 1%,

for water:

- water temperature °C or K: ± 0,5 K

The bench needs to include a thermal mass gas flow meter. The water flow rate on CH and DHW circuits needs to be measured by magnetic type flow meters.

The water flow rate on the DHW circuit needs to be automatically controlled by a proportional valve.

The electronic section of the bench needs to include free 4-20mA channels for the connection of CO+CO2 external analyzers.

The bench needs to be able to automatically control the return temperature of the boiler at any value between the temperature of the cooling water and the flow temperature of the boiler itself. The offer needs to include the electric safety tests (ground continuity, dielectric insulation strength) on the appliance.
The offer needs to include an electronic detector to find combustible gas leakages downstream the gas valve of the boiler. Open flames are not allowed. The detector needs to be connected to the control computer, so that the software can show possible gas leakages on the screen and register the test in the result database.
Water circuits need to be automatically filled at the beginning of a test and automatically emptied at the end of a test through pulses of compressed air.

The bench needs to be compliant with European regulations, in particular with ATEX directive regarding explosive areas, and it needs to be CE marked.

The gas and hydraulic circuits of the bench need to be open to ventilation and not closed in cabinets.

The test bench has to be controlled by a Personal Computer. All the software of the bench needs to run on the Personal Computer. Other types of CPUs. or PLCs are not allowed.

 The interface between the control PC and the active elements in the bench needs to be based on electronic modules. The connection between the modules and the PC needs to be through USB or ethernet ports.

The software of the bench needs to be based on the National Instruments Labview programming language, but it needs to allow the customer modifying parameters and tests without using Labview. In case the creation or modification of testing procedures in the software would need that the customer attends a training course, this has to be specified in the offer.

The customer, once able to manage the tests (in case, after a suitable training course), has to be able to select which results or measured values to save for every test. Results and measured values need to be saved in a database of SQL type. Results and measured values need to be saved on the control computer of the bench, but they have to be available from remote computers through an ethernet LAN. In the similar manner the results of test for a particular appliance needs to be available for searching, printing and exporting to spreadsheets from remote computers through an ethernet LAN.

The bench needs to include a LCD screen, at least 17". During the execution of the tests, the screen needs to show in graphical format, and not only as numbers, the values of the measured quantities. The software has also to be able to show, when needed, for every measured quantity, its acceptable

limits, the time the values need to be within limits to be considered valid, the timeout for that.
The software needs to allow instructing the operator, at every test, not only with messages on the screen, but also with pictures or movies.
The operator is not allowed skipping or cancelling tests or modifying the results of the tests.
The software of the bench needs to be able to manage the automatic execution in parallel of tests, provided that the appliance under test allows them. The tests can be individually defined, independently on their parallel execution, which has to be at charge of the software environment.
The software needs to manage all the events produced by a parallel execution, like the interruption or the faults of individual tests, that need to be repeated or aborted independently.
The software of the bench needs to allow the user defining the parameters of the tests for every single model of appliances to test, but also parameters in common among several models, so that, changing the value of a parameter, all the related models take in account the modification.

2. WARRANTY PERIOD.

The seller guarantees, minimum 24 months from the date of the acceptance protocol. The seller will provide warranty service and start repairing the device no later than 6 working days from the notification of its failure.

The seller will provide access to spare parts for a period of 10 years from the date of delivery.

III. DEADLINE FOR THE PERFORMANCE OF THE ORDER

The deadline for completing the subject of the order is 29.06.2018r.

IV. A METHOD OF PREPARING THE OFFER

It is allowed to make an offer in electronic or paper form.

The offer should be:

 - drawn up in Polish or English,

 - stamped with a company stamp,

 - have a date of preparation,

 - include the address or registered office of the bidder, telephone number, tax identification
   number,

 - signed legibly by the contractor.

V. PLACE, FORM AND DEADLINE FOR SUBMITTING OFFERS

1. The offer should be sent via e-mail to the following address:

   dotacja@termet.com.pl or delivered to the address TERMET SA, ul. Długa 13,

   58-160 Świebodzice until 2.03.2018r.

2. Offers submitted after the deadline will not be considered.

3. The bidder may change or withdraw his offer before the deadline for submission of offers.

4. In the course of examination and evaluation of offers, the Purchaser may request explanations from bidders about the content of submitted offers.

5. The Purchaser reserves the right to cancel the request for quotation.

6. Request for quotation is available at www.termet.com.pl

VI. ASSESSMENT OF OFFERS

The Purchaser will evaluate valid offers based on the following criteria:

1. Net price in PLN: weight 50%

2. Warranty period for the bench: weight 30%

3. Delivery period: 20% weight.

VII. INFORMATION ON SELECTION OF THE MOST EFFICIENT OFFER

The Purchaser will notify the bidders about the best offer via the website located at www.termet.com.pl

VIII. ADDITIONAL INFORMATION

Additional information is provided by:

- regarding the parameters of the mechanical elements of the stand:

R. Jędryszczak, email: r.jedryszczak@termet.com.pl, tel. 74 8560804,

P. Walczak, email: p.walczak@termet.com.pl, tel. 74 8560818

- regarding the software aspects of the stand:

P. Kiszczyszyn, email: p.kiszczyszyn@termet.com.pl.