NEW MEASURING EQUIPMENT

Starting with the November 1976 issue of this journal the editorial board has published systematically information on various types of measuring equipment which passed its state testing and was approved by the USSR State Committee of Standards (Gosstandart) Technoscientific Commission on Metrology and Measuring Techniques. We remind our readers that the orders for instruments should be addressed to the manufacturer. We ask you to send copies of such orders to the editorial board.

Fuel Pumps Nara-1 and Nara-II Type KER-40-05 are specified in the All-Union State Standard (GOST) 9018-70 and intended for measuring volumetrically various types of fuel with viscosities not exceeding 8 cSt at temperature of 20°C, and not exceeding 40 cSt at 40°C in delivering it to the fuel tanks of transport vehicles and self propelled machines and to the customer containers.

Basic Characteristics:

Nominal flow not less than 40 liters/min.

Minimum flow not exceeding 5 liters/min.

Minimal batch of 5 liters.

Maximum tolerated relative error of ±0.5%.

Overall dimensions for the Nara-I pump of 406 × 710 × 1520 mm and for the Nara-II pump of 416 × 790 × 1400 mm.

Mass not exceeding 170 kg.

Testing accorded to GOST 8.045-72. Made by the scientific and production association AZT Glavneftesnab RSFSR.

Set of Reference 1st Grade Weights Type MGO-1-1110-1 is intended for testing reference 2nd grade weights and second class weights with masses from 1 to 500 mg by means of the comparison method and for checking reference and laboratory balances.

Basic Characteristics:

Grade 1.

Nominal mass of 1-500 mg.

Deviations from the nominal mass of ±0.01 to ±0.005 mg.

Error in determining the mass of weights amounting to ±0.005-0.002 mg.

Mass of container with weights not exceeding 0.2 kg.

Testing was by means of the GOST 14269-69 calibration method. Made by the Gosmetr plant of the Ministry of Instrument Making, Means of Automation, and Control Systems (Minpribor).

High-Pressure Pneumatic Measuring Machine Model 310 of the Rotameter Type are intended for measuring the components linear dimensions by converting air-flow variations related to the measured parameter into displacements of an indicator float over the instrument scale. This instrument can be used with a pneumatic stopper for testing or measuring whole diameters.

Basic Characteristics:

Measurement ranges up to 5, 10, 20, 35, 60, 100, and 160 μ.

Scale factors of 0.1, 0.2, 0.5, 1.0, 2.0, 5.0, and 10.0 μ.

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Readings swing from 0.07 to 2.0 μ depending on design.

Produced with a readjustable or fixed scale factor.

Maximum tolerated basic error of 0.15 to 6.0 μ depending on design.

Overall dimensions of assembled instruments amounting to 72 × 145 × 468 mm.

Mass of 2.2 kg.

Testing accorded to GOST 13009-67. Made by the Ministry of the Machine-Tool and Instrument Industry.

Pneumatic Vasla Pressure Meters Type PPV-1 are intended for automatic measurements of arterial pressure.

Principle of operation based on the indirect method of evaluating pressure from the counter pressure value.

Basic Characteristics:

The basic error in measuring systolic and diastolic pressures in the ranges of 50-250 and 20-150 mm Hg, respectively, not exceeding ±10 mm Hg without counting the error contributed by the measuring method.

Variation in the instrument readings between two cycles of measurements not exceeding ±5 mm Hg.

Automatic operating conditions with a peridicity of 5 ± 1 min and 15 ± 3 min, as well as manual operation for single measurements by depressing the "Start" button.

Overall dimensions of 300 × 312 × 205 mm.

Mass not exceeding 9 kg.

Testing techniques are described in utilization document and agree with the All-Union Scientific-Research Institute of Physicotechnical and Radiotechnical Measurements (VNIIFTRI). Made by the Ministry of the Communications Industry.

Device for Remote Measurement and Recording of Relative Humidity type UDROV-04T with a Primary Transducer Type EV4-04T is intended for remote measuring, recording, and regulating (with an incorporated regulation device), relative humidity of air-conditioning systems in production, administrative, and living premises. Principle of operation based on the transducer resistance variations due to changes in relative humidity.

Basic Characteristics:

Measurement range of 60-95% relative humidity in the temperature range of 10-35°C.

Maximum permissible relative-humidity measurement error of ±3% at the temperature of 20 ± 2°C and of ±5% at 10-35°C.

Testing techniques are described in utilization documents and agreed with the Mendeleev All-Union Scientific-Research Institute of Metrology (VNIIM). Made by the Minpribor Ivanovo Production and Technical Association Proménergoremont.

Humidity Meter Type VV-2 is intended for measuring and signaling (regulating) relative humidity.

Basic Characteristics:

Measurement range of 40-90% relative humidity at temperatures of 5 to 35°C.

Measurement error does not exceed 4% relative humidity.

Testing technique is described in utilization document and agreed with VNIIM. Made by Minpribor.

Pneumatic Pressure-Difference Measuring Transducers (Differential Manometers) Types 13DD11-720, 13DD11-722, 13DD11-724, 13DD01-725, and 13DD01-727 are intended for operation in automatic systems for testing, controlling and regulating parameters of various technological processes in order to provide information on pressure drops, fluid flows, and liquid levels in the form of standard analog pneumatic output signals.

TABLE 1

Name		Model 13DD11-720	Model 13DD11-722	Model 13DD11-724	Model 13DD01-725	Model 13DD01-727
Maximum nominal pressure drop	kgf/cm²	2,5 4,0 6,3	—	—	—	—
	kgf/cm²	— — —	400 630 1000	100 160 250	100 160 250 400	40 100 63
Precision class		0,6 1,0 1,5	0,6 1,0	0,6 1,0	0,6 1,0	0,6 1,0
Maximum tolerated working overpressure, kgf/cm²		160	25	25	4	4
Mass not exceeding, kg		5	9	14	20	28
Overall dimensions, mm		100×140× ×195	125×140× ×235	216×140× ×300	265×215× ×210	300×215

Basic Characteristics: (see Table 1).

Testing accorded to GOST 8.052-73. Made by Minpribor.

Cardboard Thickness Meter Type TK-600 is intended for sorting cardboards according to their thickness. Principle of operation is based on the vertical displacement of the measuring rod when the measured sample is inserted between the upper and lower measuring surfaces at pressures on the tested specimen of 100 ± 10 kPa.

Basic Characteristics:

Thickness measurement range of 0-6 mm.

Scale factor of 0.02 mm.

Maximum tolerated measurement error of ±0.04 mm.

Readings convergence not exceeding 0.01 mm.

Measuring-surfaces contact area of 4 ± 0.1 cm^2.

Measuring pressure of 100 ± 10 kPa.

Overall dimensions of 900 × 1200 × 1500 mm.

Mass not exceeding 230 kg.

Testing technique is as described in utilization documents and agreed with the Ukrainian Republican Center of Standardization and Metrology (URTsSM). Made by the USSR Ministry of the Pulp and Paper Industry.

System for Registering the Length and Area of Paper on a Longitudinal-Cutting Machine is intended for calculating the area of paper processed on the machine during a shift or a day, as well as for calculating running meters processed in one shift with a subsequent semi-automatic determination of the area of each roll.

Basic Characteristics:

Measurement ranges of lengths up to 99,999 m and areas up to 99,999 m^2.

Format-setting range of 0-2999 mm.

Number of simultaneously set formats amounts to three.

Paper-cutting speed range of 0-3000 m/min.

Basic error in measuring the length of paper and cardboard not exceeding 0.5% under normal winding conditions and not exceeding 1.0% in the breaking and cutting conditions.

Mass not exceeding 80 kg.

Overall dimensions of 600 × 1200 × 360 mm.

Testing technique is described in utilization documents and agreed with VNIIM.

Instrument Type IDK is intended for measuring the internal and external diameters of the drilling-derricks diamond bits and expanders and of diamond boring tools in the course of their manufacture. Principle of operation based on evaluating the measured diameter deviation from the reference standard.

Basic Characteristics:

Nominal measured-bits diameters of 36/24, 46/32, 59/42, and 76/59 mm (instruments for bits with diameters of 93 and 112 mm are supplied on special orders).

Measurement error of ±0.02 mm.

Overall dimensions of 375 × 108 × 115 mm.

Mass of 4.3 kg.

Testing technique is described in utilization documents and agreed with VNIIM. Geotekhnika experimental plant for geological prospecting equipment and instruments.

Roundness Meter Model 206 Type KD is made with a 2nd class precision according to GOST 17353-71 and intended for recording in polar and linear coordinates deviations of nominally-coaxial cylindrical surfaces from their shape and relative position (deviations from cylindricity and coaxiality), deviations of their profile (from roundness, linearity, concentricity, and parallelism), and deviations from the plane perpendicular to the rotation axis of the intersection line between the cylindrical and tested surfaces, as well as for measuring deviations from roundness according to GOST 10356-63 and discrepancies between the adjacent-circumference diameters of various solids-of-revolution cross-section profiles. Principle of operation based on probing the measured-component tested cross section.

Basic Characteristics:

Measurement ranges of 0.0002-0.1 mm with a short probe and of 0.0004-0.2 mm with a long probe.

Ranges of the components measured external or internal diameters up to 3-160 mm and of heights up to 250 mm.

Maximum measured-components mass of 10 kg.

Radial error of 0.12 μ.

Axial error of 0.15 μ.

Magnification error of 5% in measuring with the short probe and of 8% with the long probe.

Mass of 350 kg.

Overall dimensions of 1350 × 620 × 1250 mm.

Testing technique is described in utilization documents and agreed with the All-Union Scientific-Research Institute of Metrology and Standardization (VNIIMS). Made by the Ministry of Machine-Tool and Instrument Industry.

Reference Level Meter Type UO-12 is intended for transmitting the liquid-level measurement unit from reference installations to working level meters with a range of 0-12 m.

Basic Characteristics:

Level-measuring range of 0-12 m.

Maximum basic error of ±2 mm.

Water is the medium used for measurements according to GOST 2874-73.

Measured medium temperature amounting to 20 ± 5°C.

Testing technique is described in utilization documents and agreed with the VNIIFTRI Kazan' branch. Made by the Minpribor Kazan' "Étalon" plant.