



OEM Ability!

RUSSIAN MANUFACTURER
OF PROCESS CONTROL INSTRUMENTS



ELEMER-IKSU-2012

Multifunctional calibrator with HART ability

Accuracy, multifunctionality combined with easy-to-use operation

IKSU-2012 is a high accuracy calibrator with HART and data logging abilities. IKSU can be used for calibration of pressure and temperature transmitters, process automation systems both in laboratory and on-site environment. IKSU's functionality enables its use in many industries.

Multimode operation features include:

- Meter and source functions
- Pressure and temperature transmitters calibration with relays testing ability
- Meters and process automation systems calibration
- HART-communicator functions
- Nonvolatile data memory recording
- Easy data transfer to PC for a calibration protocol generation

Temperature transmitters calibration



Reference pressure transmitters and reference thermometer compatibility

Reference pressure transmitters PDE-020 and PDE-020I

IKSU uses digital interface to communicate with absolute, gauge and compound pressure transmitters. Two enclosure types (display/no display) and two application-specific models (industry, «intrinsic safety») enable wide area of use. PDE-020I can be used in standalone applications featuring a rotating enclosure and built-in batteries. Accuracy is better than $\pm 0.02\%$ of measured value.

Digital reference thermometer TCE-005/M3

TCE-005/M3 measures temperature with accuracy better than $\pm 0.02\text{ }^\circ\text{C}$. Wide range of models with rod, angled and cable types of sensors is available.

IKSU-2012 specifications

Source and meter	Range		Accuracy	
	Source	Meter	Source	Meter
Current	0...25 mA	0...25 mA	$\pm(10^{-4} \times I + 1) \mu\text{A}$	$\pm(10^{-4} \times I + 1) \mu\text{A}$
Voltage	-10...100 mV	-10...100 mV	$\pm(7 \times 10^{-5} \times U + 3) \mu\text{V}$	$\pm(7 \times 10^{-5} \times U + 3) \mu\text{V}$
	0...12 V	0...120 V	$\pm 3 \text{ mV}$	$\pm(12,5^{-5} \times U + 5) \text{ mV}$
Resistance	0...180 Ohm	0...320 Ohm	$\pm 0,015 \text{ Ohm}$	$\pm 0,01 \text{ Ohm}$
	180...320 Ohm	—	$\pm 0,015 \text{ Ohm}$	—

PDE-020, PDE-020I specifications

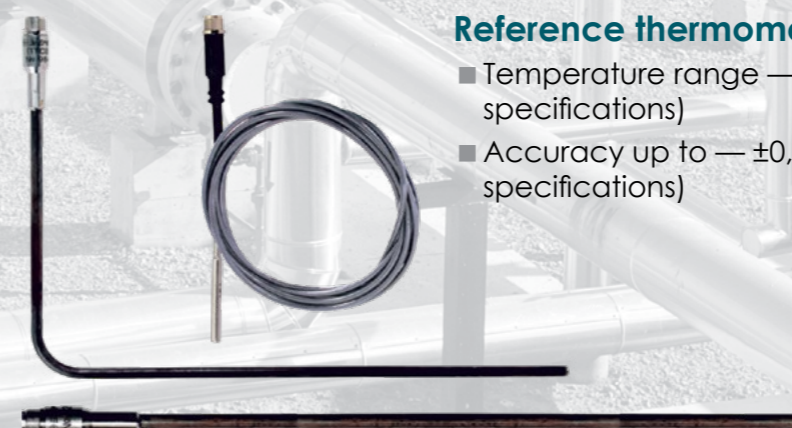
Order code	Range	Accuracy, δ
A0	from 0 to 50 % FS	$\pm 0.01\%$ FS
	from 50 to 100 % FS	$\pm 0.02\%$ P
A	from 0 to 33 % FS	$\pm 0.01\%$ FS
	from 33 to 100 % FS	$\pm 0.03\%$ of measured value
B	from 0 to 33 % FS	$\pm 0.017\%$ FS
	from 33 to 100 % FS	$\pm 0.05\%$ of measured value
C	from 0 to 33 % FS	$\pm 0.033\%$ FS
	from 33 to 100 % FS	$\pm 0.1\%$ of measured value

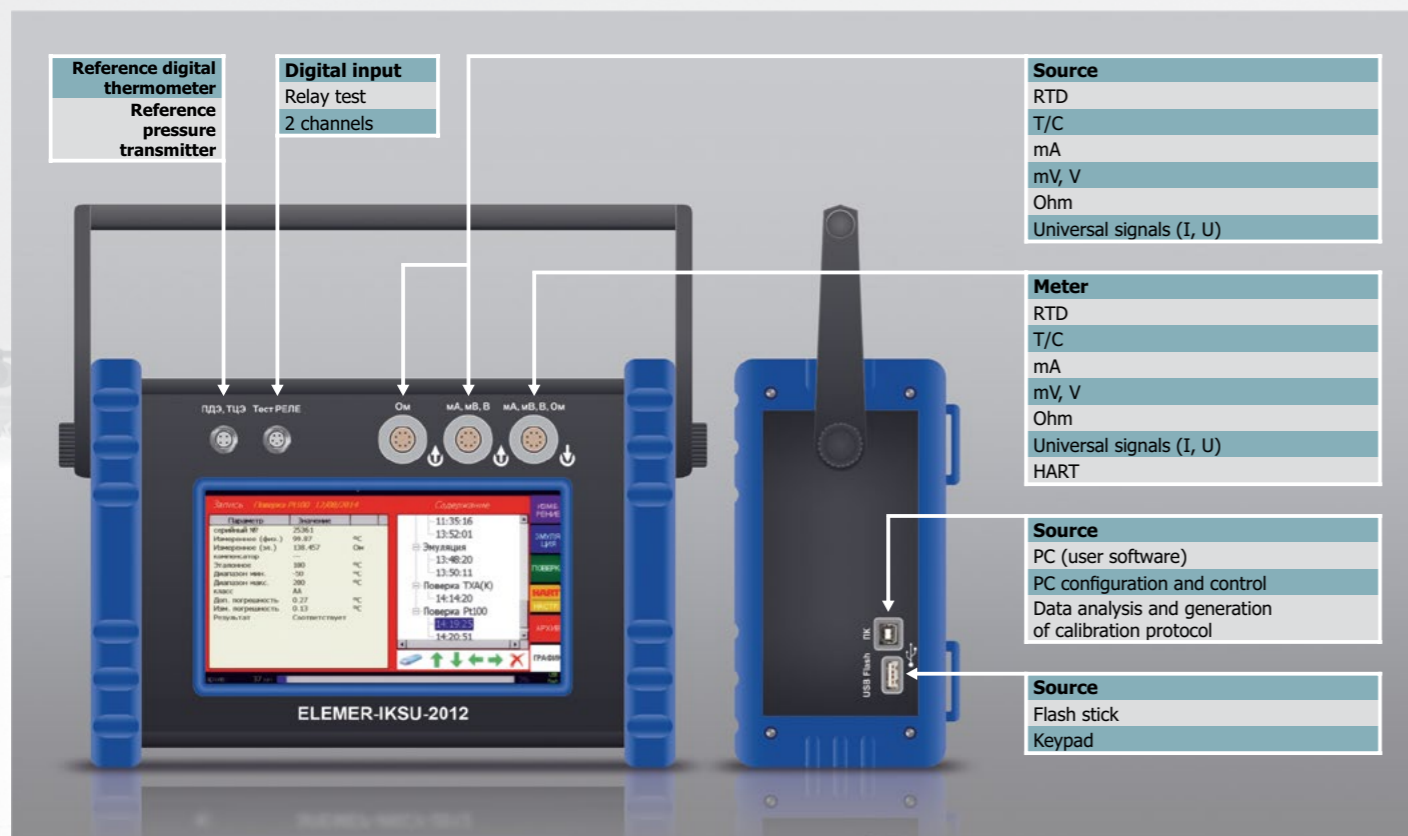
PDE-020, PDE-020I models

Model	Pressure measured	Pressure range	Max pressure	Order code
010	Absolute	0...10 kPa	150 kPa	B, C
030	Absolute	0...120 kPa	300 kPa	A0, A, B, C
040	Absolute	0...250 kPa	1 MPa	A0, A, B, C
050	Absolute	0...600 kPa	2 MPa	A0, A, B, C
060	Absolute	0...2,5 MPa	6 MPa	A0, A, B, C
070	Absolute	0...6 MPa	16 MPa	A0, A, B, C
080	Absolute	0...16 MPa	25 MPa	A0, A, B, C
100	Manometric	0...2,5 kPa	7,5 kPa	B, C
110	Manometric	0...6,3 kPa	100 kPa	A, B, C
120	Manometric	0...16 kPa	100 kPa	A0, A, B, C
120E	Manometric	0...40 kPa	200 kPa	A0, A, B, C
130	Manometric	0...100 kPa	300 kPa	A0, A, B, C
140	Manometric	0...250 kPa	1 MPa	A0, A, B, C
150	Manometric	0...600 kPa	1,6 MPa	A0, A, B, C
160	Manometric	0...2,5 MPa	6 MPa	A0, A, B, C
170	Manometric	0...6,0 MPa	16 MPa	A0, A, B, C
180	Manometric	0...16 MPa	25 MPa	A0, A, B, C
190	Manometric	0...60 MPa	100 MPa	A0, A, B, C
190E	Manometric	0...100 MPa	120 MPa	A0, A, B, C
310	Manometric negative pressure	-10...10 kPa	100 kPa	A, B, C
320	Manometric negative pressure	-40...40 kPa	200 kPa	A0, A, B, C
340	Manometric negative pressure	-100...160 kPa	1 MPa	A0, A, B, C
350	Manometric negative pressure	-100...600 kPa	1,6 MPa	A0, A, B, C

Reference thermometers specifications

- Temperature range — $-200...660\text{ }^\circ\text{C}$ (see reference thermometer specifications)
- Accuracy up to — $\pm 0,02\text{ }^\circ\text{C}$ (see reference thermometer specifications)





Features:

Accuracy. Superior meter/ source of current, voltage and Ohms.

Convenient and easy-to-use. Multifunctional metrological device with 7" touchscreen display.

HART-communicator. HART-communicator with a set of common practice commands for pressure and temperature transmitters.

PC software. Feasibility of IKSU-based paperless automated system for control and registration of plant calibration activity.

Standalone mode. Batteries backed operation for up to 8 hours, 24 V current loop power.

Pressure transmitters calibration

Standard delivery:

- ELEMER-IKSU-2012 with meter, source, calibrator, data recorder and HART-communicator functions;
- Meter and control cables;
- Power adapter;
- User manual;
- DVD with PC software (ARM IKSU) to support calibration procedure and protocol generation.

Options:

- Additional meter cables;
- High accuracy thermometers for calibration procedure;
- High accuracy pressure meters for calibration procedure;
- Manual pressure pumps, fittings and time-saving mounting fixtures for pressure meters mount;
- Lightweight carrying case.



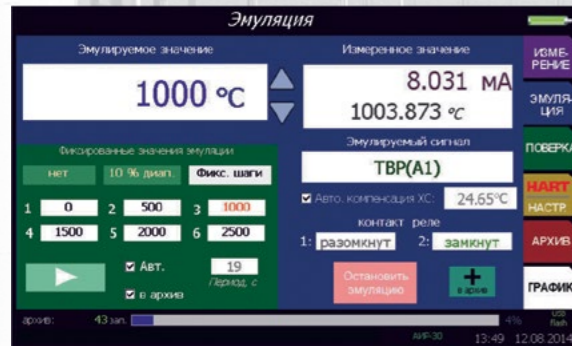
IKSU-2012 operational modes



Measure mode

Mode for measuring current, voltage, Ohms, temperature and pressure.

Simultaneous reading of data from reference pressure and temperature transmitters and relay testing are possible. Built-in batteries provide power for current loop transmitters.



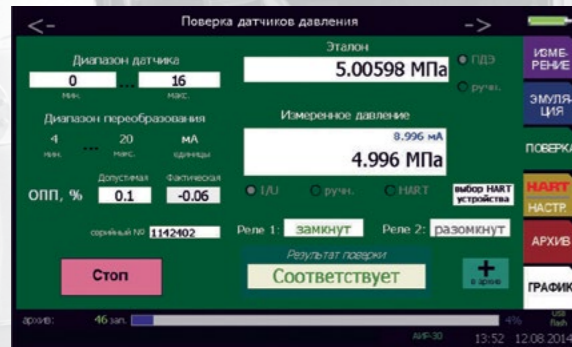
Source mode

Mode for emulating outputs of temperature and pressure transmitters and for generating analog signals.

The mode allows testing and calibration of meters, regulators, cable lines and automated process control systems.

IKSU sources universal current/voltage signals scaled in RTD or T/C temperature units.

Simultaneous signal emulation and measurement of the tested device current output is also possible.



Calibrator mode

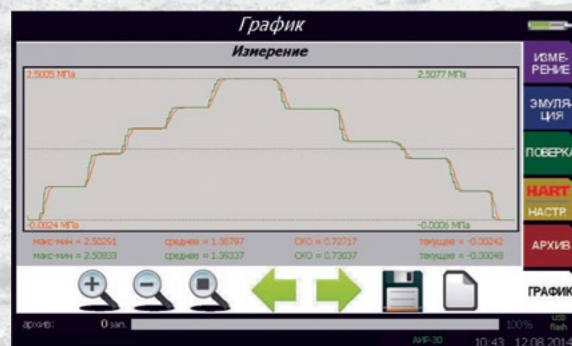
Mode for meters calibration.

IKSU reads reference and tested meters data, calculates accuracy and documents passed/not passed conclusion. Sourcing input for analog/temperature/pressure meters combined

with simultaneous measurement of meters current output allows testing of automated process control systems. Manual entry of measured data is also supported.

Operational modes include:

- 1 Pressure transmitters calibration
- 2 Temperature transmitters calibration
- 3 Controllers and automated process control systems calibration

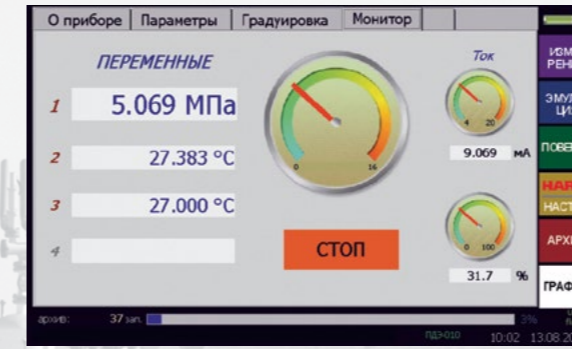


Data recorder

Mode for 2 channel batch-type data recording.

Nonvolatile memory data can be exported to a USB flash stick for advanced process data analysis.

IKSU-2012 operational modes



HART-communicator

Mode for data reading and configuration of meters with HART ability. IKSU supports sets of Common Practice Commands which allow:

- Loop current trimming by using IKSU's high accuracy measurement of current
- Sensor trimming by using readings of reference temperature and pressure transmitters

Built-in 25 Ohm resistor

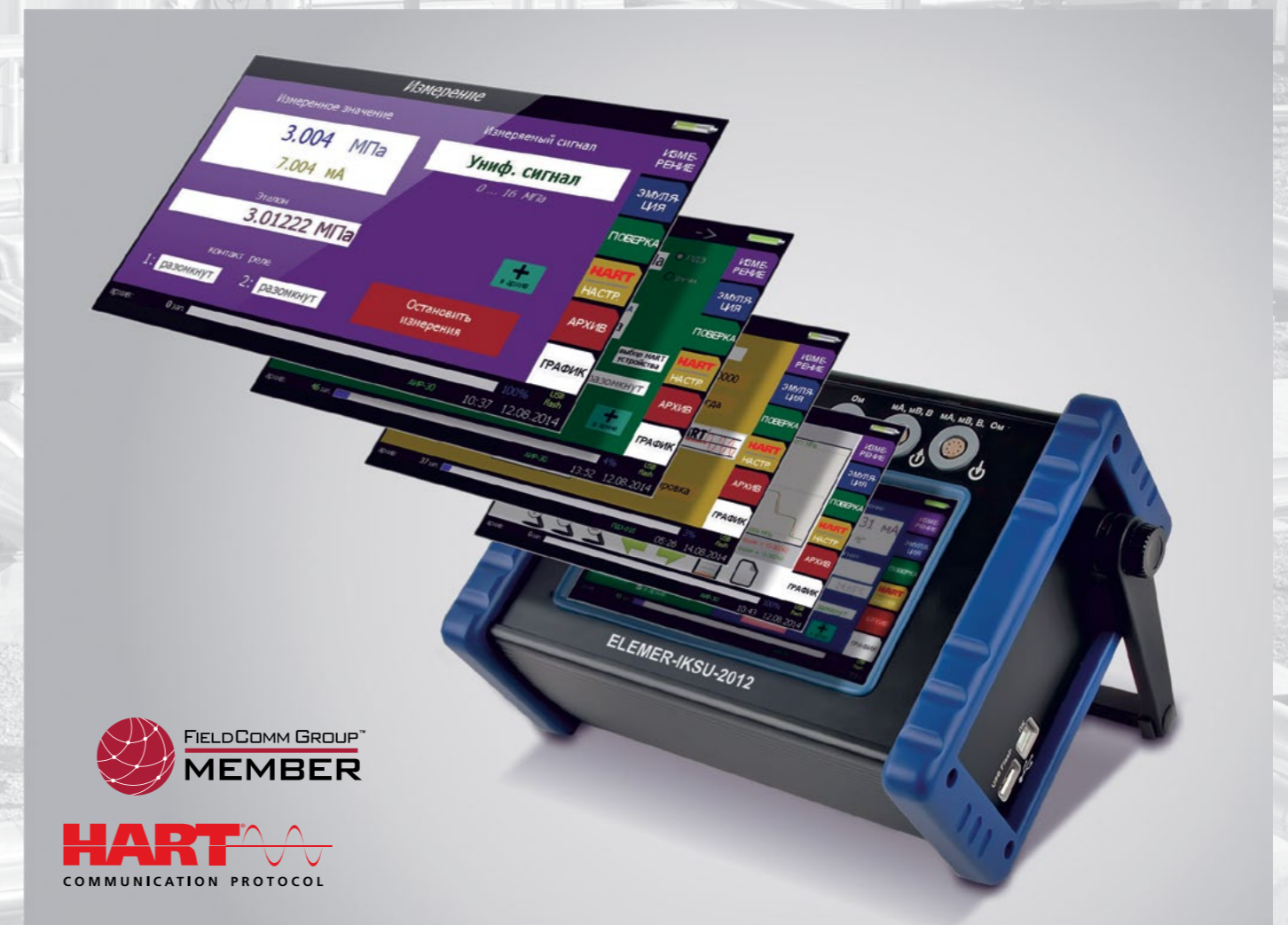
HART-communication uses built-in 25 Ohm resistor automatically connected into current loop.

Simple and convenient use

User friendly and intuitive operation. Colour LCD display with 800x480 pixel resolution provides clear and easy way to see virtually all the actual information in any operational mode. Touchscreen, wireless keyboard and mouse provide comfortable options for IKSU control. Data export to flash stick or to remote PC enables advanced data analysis.

PC software

PC software helps the user to control IKSU modes of operation and to generate calibration protocols in full accordance with standards.





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