



**NIK**®







## About us

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NIK LLC is one of the leading electrotechnical companies manufacturing metering devices and developing AMI systems on the Eastern European market. The company is headquartered in Kyiv, Ukraine.

Over five years ago NIK decided to develop smart devices and energy metering systems. Today our plants and laboratories employ over 600 people, including design engineers, programmers and other highly qualified specialists. Our company has been certified to comply with ISO 9001:2008 and ISO 14001:2004 (TUV Thuringene.V.).

Product quality is our top priority. All equipment is developed in compliance with IEC standards. We use only quality components from world class manufacturers to deliver highly reliable products that are tested under normal and extreme laboratory conditions.



The depletion of natural resources and subsequent rise in energy prices is one of the critical issues the modern society is concerned about. In its operations NIK actively integrates highly efficient and energy saving technologies to protect the environment.

**NIK Water and Heat Meters provide:**

- High metering accuracy;
- Remote data transmission;
- Multi-stage protection against falsifying measurement results;
- A wide range of operating parameters.

Our partners can always be certain of complete control over energy consumption as the price of such energy resources tends to rise. It is of special value when it comes to the energy consumed on the scale of power supply companies and power systems of particular regions and the country in general.



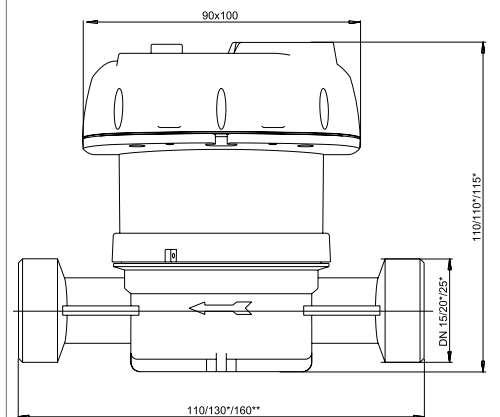
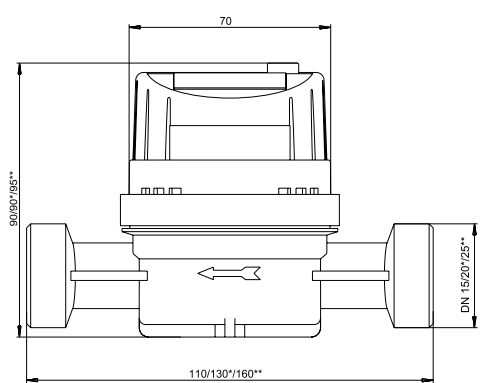
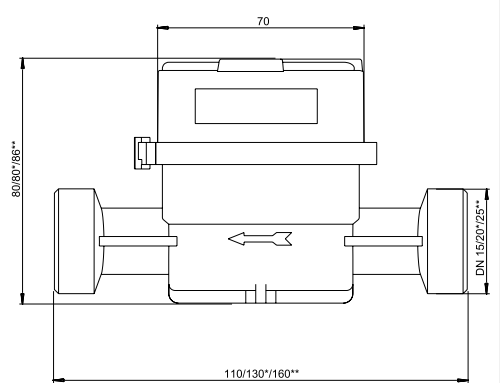


**NIK-7011 water flow meters**

NIK-7011M-X-XX-0-0

NIK-7011E-X-XX-0-0

NIK-7011E-X-XX-1-1



NB. Dimensions are in mm

**Meter Configurations**

NIK-7011 X X XX X X	<b>Radio channel</b> 0 – none 1 – yes
	<b>Optical port</b> 0 – none 1 – yes
	<b>DN</b> 15 20 25
	<b>Water temperature</b> C – cold H – hot
	<b>Type of indicator</b> M – mechanical E – electronic
	<b>Water flow meter</b>

**Features**

- A meter with an electronic indicator has no magnetic coupling which means that it is not affected by magnetic fields;
- A meter with a mechanical indicator is protected against magnetic field influence;
- Compliant with DSTU 3580;
- Option of taking water consumption readings through an optical port or radio interface.

**Technical Specifications**

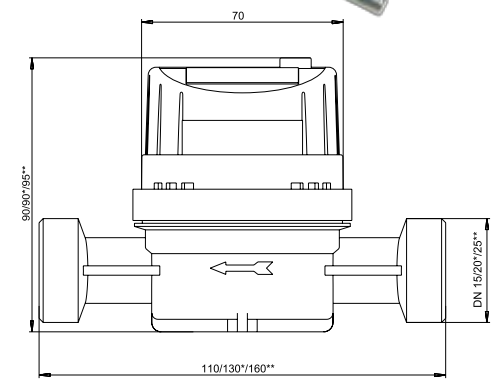
Nominal diameter	DN 15	DN 20	DN 25
Nominal volume flow rate $q_n$ , m <sup>3</sup> /h	1.5	2.5	3.5
Maximal volume flow rate $q_{max}$ , m <sup>3</sup> /h	3.0	5.0	7.0
Nominal pressure, kPa	1000		
Pressure loss with maximal consumption rate, kPa, max.	100		
Water temperature, °C for cold water meters; for hot water meters	from 0.1 to 30 from 30 to 90		
Sensitivity, m <sup>3</sup> /g	0.015	0.025	0.035
Reducing volume flow rate $q_r$ , m <sup>3</sup> /h vertical position (class A)	0.15	0.25	0.35
	horizontal position (class B)	0.12	0.2
Minimal volume flow rate $q_{min}$ , m <sup>3</sup> /h vertical position min (class A)	0.06	0.1	0.14
	horizontal position (class B)	0.03	0.05
Nominal pressure, kPa	1000		
Type of threaded connections as per GOST 6357	G ¾ B	G 1 B	G 1 ¼ B
Weight for meters with mechanical indicator (NIK-7011M), kg, max.	0.47	0.55	0.75
Weight for meters with electronic indicator (NIK-7011E), kg, max.	0.55	0.6	0.85
Weight for meters with radio interface, kg, max.	0.8	0.9	1.2



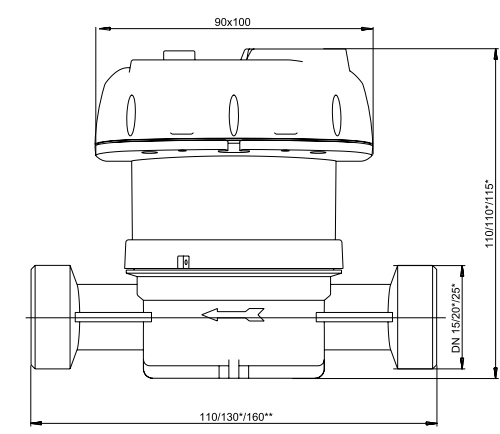


**NIK-7061 heat flow meters**

NIK-7061-XX-0-0-XX,X



NIK-7061-XX-1-1-XX,X



NB. Dimensions are in mm

**Meter Configurations**

NIK-7061 XX X X XX,X

<b>Thermal sensor wire length</b> - 1.5 - 10 m with increment 0.5 m, and standard length 1.5 m
<b>Radio interfaces</b> 0 - none 1 - yes
<b>Optical port</b> 0 - none 1 - yes
<b>DN</b> 15 20 25
<b>Heat meter</b>

**Features**

- No magnetic coupling means the water meter is not affected by external magnetic fields;
- Compliant with DSTU EN 1434;
- Option of taking readings through an optical port or radio interface.

**Technical Specifications**

	DN 15	DN 20	DN 25
Nominal diameter	DN 15	DN 20	DN 25
Nominal heat carrier consumption rate, m <sup>3</sup> /h	1.5	2.5	3.5
Max. heat carrier consumption rate, m <sup>3</sup> /h	3.0	5.0	7.0
Min. heat carrier consumption rate, m <sup>3</sup> /h	0.03	0.05	0.07
Heat carrier consumption sensitivity, m <sup>3</sup> /h	0.006	0.01	0.014
Threaded connections of metering section	G 3/4 B	G 1 B	G 1 1/4 B
Heat meter weight w/o radio interface, kg, max.	0.73	0.78	1.03
Heat meter weight with radio interface, kg, max.	0.8	0.9	1.2
Max. heat flow value , kW, max.	250	400	400
Class of accuracy	3		
Operating class	A		
Heat amount measurement units	kW*h		
Type of heat carrier	Water		
Operating pressure, kPa	1600		
Pressure loss, kPa	< 24		
Heat carrier temperature, °C	4 - 95		
Operating difference of thermal sensor temperatures, °C	3 - 70		
Length of damping linear pipeline section before and after heat meter	3 DN before thermal sensor and 2 DN after thermal sensor		
Options of installation	Horizontal and vertical		
Energy calculation principle (dynamic characteristic)	Energy = V * Δθ * k, where V - water volume, Δθ - temperature difference, k - coefficient as per DSTU EN		
Forward and reverse direction operations	Thermal sensor installed in forward direction		
Dust and water protection class as per GOST 14254	IP54		





## NIK-7051 heat meter with ultrasonic flow sensors (NIK-7041)

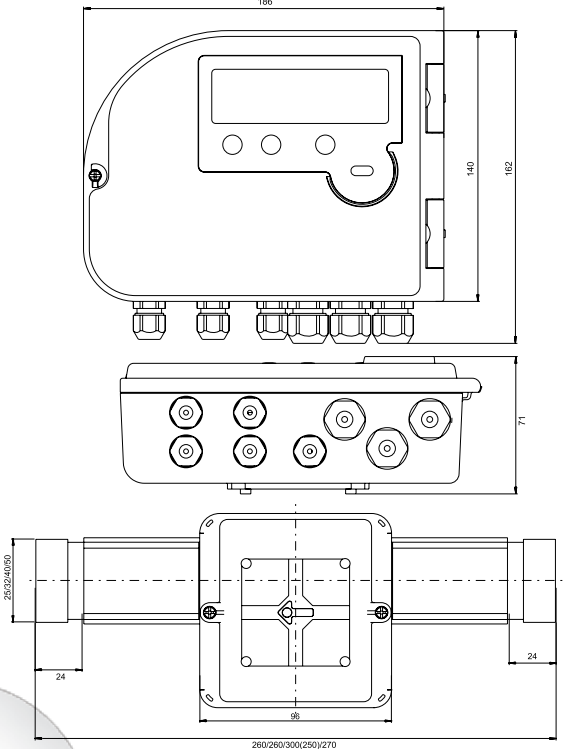


### Technical Specifications

Types of extra signal interfaces	Optical port, radio interface			
Qty of connected flow meters	1 - 3			
Types of connected thermal sensors	Pt 500			
Qty of connected thermal sensors	Max. 3			
Nominal consumption rate $q_{pr}$ , m <sup>3</sup> /h	3.5	6	10	15
Max. consumption rate $q_{cr}$ , m <sup>3</sup> /h	7	12	20	30
Min. consumption rate $q_{lr}$ , m <sup>3</sup> /h	0.035	0.06	0.1	0.15
Threshold of sensivity, m <sup>3</sup> /h	0.007	0.012	0.021	0.03
Pressure loss, kPa, max.	25	25	60	140
Threaded connection	G 1 ¼ B	G 1 ¼ B	G 2 B	-
Flanged connection	-	-	-	DN50
Price of flow meter count pulse, pulse/l	50	25	15	10
Operating class	C			
Max. heat flow value, kW	6000			
Operating pressure, kPa	1600			
Energy calculation principle (dynamic characteristic)	Energy = V * Δθ * k, where V – water volume, Δθ – temperature difference, k – coefficient as per DSTU EN 1434			
Flow meter installation place	Forward flow			
Class of calculator and flow meter unit body protection against dust and water as per GOST 14254	IP54			

### Features

- An innovative technology for determining heat carrier consumption rate is based on the time-of-flight concept to provide a low threshold of sensivity and high measurement accuracy throughout the consumption range;
- Dynamic range 1:100;
- Compliant with DSTU EN 1434;
- Option of taking readings through an optical port or radio interface;
- The interference immunity of heat carrier consumption data is provided by installing a flow transducer at the consumption metering section;
- The range of the operation difference of the heat carrier temperature is 3...140 °C, and maximal permissible temperature is 160 °C to provide the declared metering accuracy in all potential operating temperature conditions of the device.



NB. Dimensions are in mm

## Meter Configurations

NIK-7051 XX XX XX XX XX XX

- Type of thermal sensor 3**
- 00 – no thermal sensor
- 2d – Pt500 two-wire, d – cable length\*
- 4d – Pt500 four-wire, d – cable length\*
- Types of thermal sensors 1 and 2**
- 2d – Pt500 two-wire, d – cable length\*
- 4d – Pt500 four-wire, d – cable length\*
- Type of connected flow meter 3**
- 00 – no flow meter
- Ad – NIK-7041, Qnom=3,5m<sup>3</sup>/h, G1¼ B x 260 mm, battery power supply, d – cable length\*
- Bd – NIK-7041, Qnom=3,5m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Cd – NIK-7041, Qnom=6m<sup>3</sup>/h, G1¼ B x 260 mm, battery power supply, d – cable length\*
- Dd – NIK-7041, Qnom=6m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Ed – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300, battery power supply, d – cable length\*
- Fd – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300, external power supply, d – cable length \*
- Gd – NIK-7041, Qnom=10m<sup>3</sup>/h, DN40 x 250, battery power supply, d – cable length\*
- Hd – NIK-7041, Qnom=10m<sup>3</sup>/h, DN40 x 250, external power supply, d – cable length \*
- Id – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, battery power supply, d – cable length\*
- Jd – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, external power supply, d – cable length \*
- Type of connected flow meter 2**
- 00 – no flow meter
- Ad – NIK-7041, Qnom=3.5m<sup>3</sup>/h, G1¼ B x 260 mm, battery power supply, d – cable length\*
- Bd – NIK-7041, Qnom=3.5m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Cd – NIK-7041, Qnom=6m<sup>3</sup>/h G1¼ B x 260 mm, battery power supply, d – cable length\*
- Dd – NIK-7041, Qnom=6m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Ed – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300 mm, battery power supply, d – cable length\*
- Fd – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300, external power supply, d – cable length\*
- Gd – NIK-7041, Qnom=10m<sup>3</sup>/h, DN40 x 250, battery power supply, d – cable length\*
- Hd – NIK-7041, Qnom=10m<sup>3</sup>/h DN40 x 250, external power supply, d – cable length\*
- Id – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, battery power supply, d – cable length\*
- Jd – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, external power supply, d – cable length\*
- Type of connected flow meter 1**
- Ad – NIK-7041, Qnom=3,5m<sup>3</sup>/h, G1¼ B x 260 mm, battery power supply, d – cable length\*
- Bd – NIK-7041, Qnom=3,5m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Cd – NIK-7041, Qnom=6m<sup>3</sup>/h, G1¼ B x 260 mm, battery power supply, d – cable length\*
- Dd – NIK-7041, Qnom=6m<sup>3</sup>/h, G1¼ B x 260 mm, external power supply, d – cable length\*
- Ed – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300, battery power supply, d – cable length\*
- Fd – NIK-7041, Qnom=10m<sup>3</sup>/h, G2B x 300, external power supply, d – cable length \*
- Gd – NIK-7041, Qnom=10m<sup>3</sup>/h, DN40 x 250, battery power supply, d – cable length\*
- Hd – NIK-7041, Qnom=10m<sup>3</sup>/h, DN40 x 250, external power supply, d – cable length \*
- Id – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, battery power supply, d – cable length\*
- Jd – NIK-7041, Qnom=15m<sup>3</sup>/h, DN50 x 270, external power supply, d – cable length \*
- Interface**
- 00 – optical interface only
- A0 – optical and radio interface with battery power supply
- Bd – optical radio interface, with mains supply, d – mains cable length\*
- Cd – optical and radio interface with mains supply and external antenna, d – mains cable length\*
- Dd – optical and radio interface with mains supply, external antenna, and amplifier, d – mains cable length\*
- Ed – optical and GSM with mains supply, d – mains cable length\*
- Fd – optical and GSM with mains supply and external antenna, d – mains cable length\*
- Gd – optical and Ethernet with mains supply, d – mains cable length\*
- Hd – optical and RS232 (Rx, Tx) with mains supply, d – mains cable length\*
- Id – optical and RS232 (Rx, Tx, CTS, RTS) with mains supply, d – mains cable length\*
- Jd – optical and RS485 with mains supply, d – mains cable length\*
- Thermal sensor**

\* **Note:** Cable length designation (d): • 0 – no cable, • A – 1.5 m, • B – 3 m, • C – 5 m, • D – 10 m.





## Water and Heat Metering System

The System is developed to provide solutions to existing and recurring problems in today's power market environment, including:

- to eliminate losses (leaks, irrational use) of water and heat energy;
- to monitor, prepare the balance, and plan resource consumption;
- to reduce costs and simplify the configurations of the systems for collecting, storing, and transmitting commercial consumption data.

Water and Heat Metering System may be implemented in accordance with Smart Grid Concept.





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