ГРУППА ПРИБОРОСТРОИТЕЛЬНЫХ КОМПАНИЙ

ИТеК
ББМВ

Энергия –
Источник

MADE IN
RUSSIA

ГРУППА ПРИБОРОСТРОИТЕЛЬНЫХ КОМПАНИЙ

ИТеК ББМВ

Энергия - Источник

LOCALIZATION

95-100%

Cooperation
with Russian suppliers

ISO 9001

Quality management
system certification

TÜV Thüringen

RUSSIAN developer and manufacturer

CHELYABINSK

24

YEARS
ON THE MARKET

ГАЗПРОМ

ГАЗПРОМ НЕФТЬ

ЛУКОЙЛ НЕФТЯНАЯ КОМПАНИЯ

БАШНЕФТЬ

РОСНЕФТЬ

Транснефть

ТАТНЕФТЬ

LEAD TIME

7-30 days

PRICES

15-50%

Lower than competitors

SALES GEOGRAPHY

Russia, Kazakhstan, Belarus, Armenia, Bulgaria, Latvia, Bahrain, Uzbekistan

NPP LICENS

For production and product development

OUR CUSTOMERS

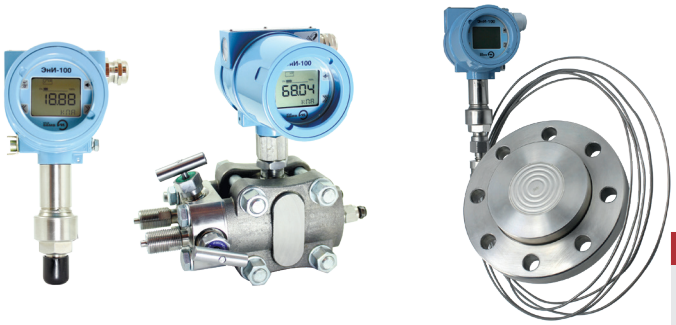
РОСАТОМ
ИНТЕР РАО
МАГНИТОГОРСКИЙ МЕТАЛЛУРГИЧЕСКИЙ КОМБИНАТ
ГМС ГРУППА
TT group
СИБИРСКАЯ ГЕНЕРИРУЮЩАЯ КОМПАНИЯ
ЕВРАЗ
OZNA
ЮНИ ПРО
ЕВРОСИБЭНЕРГО
РУСАЛ
УГМК UMMC
ЧКЗ
СИБУР
URALKALI

PRESSURE MEASURING

SIL KZ BY UZ

IGC

-60°C



NEW

Assemble to diaphragm seals

Pressure transmitters	EnI-100
Measurement type	differential, gage, absolute, hydrostatical
Pressure range	-0,1…100 MPa
Output signal	4...20 mA, 4...20 mA / HART
Ambient temperature	-60…+80 °C
Explosion protection	Exd, Exia, Exd+ia
Accuracy	±0,075; ±0,1; ±0,15; ±0,2; ±0,25; ±0,5 %
Calibration period	5 years (±0,2; ±0,25; ±0,5%); 4 years (±0,1; ±0,15%); 3 years (±0,075%)
Additional options	Factory assembly with diaphragm seals (direct mounting and external membranes) and manifolds

SIL KZ BY UZ

-60°C

Pressure transmitters	EnI-12
Measurement type	differential, gage, absolute, hydrostatical
Pressure range	-0,1…100 MPa
Output signal	4...20 mA; 4...20 mA / HART
Ambient temperature	-60…+80 °C
Explosion protection	Exd, Exia, Exd+ia
Accuracy	±0,075; ±0,1; ±0,15; ±0,2; ±0,25; ±0,5 %
Calibration period	5 years (±0,2; ±0,25; ±0,5%); 4 years (±0,1; ±0,15%); 3 years (±0,075%)
Additional options	Assembly to diaphragm seals and manifolds

-60°C

Manifolds	BKN-1, BKN-2, BKN-3, BKN-5	Vessels SU, SK, SR
Type	1; 2; 3; 5 - valves	leveling, separation, condensing
PN	40 MPa	up to 40 MPa
Process temperature	-60…+200 °C	-196…+480 °C
Process connection / Additional options	flanged, M20x1,5; M22x1,5; G1/2; G1/4; 1/2 NPT; 1/4NPT; K1/2; K1/4; R1/2; R1/4 /drain, connection of calibration equipment	stub-in connection, weldingnipple
Installation kit	mounting bracket, flange, nipple, wrapperrings	materials of construction: steel 12X18H10T, steel 20

NEW

Flange and threaded diaphragm seals	RSM-R with filling valve	RSM-5319, -5320, -5321, -5322	RSM-306 with flushing port
Connection type	fittings M20x1,5, G1/2, 1/2NPT, K1/2	fittings M20x1,5; G1/2, 1/2NPT, K1/2; flanged DN50, DN100	flanged DN50, DN80
Pressure range	-0,1…60 MPa	-0,1…60 MPa	0,6…25 MPa
Temperature range	-60…+200 °C	-40…+200 °C	-40…+200 °C
	-60…+260 °C - with 316L membrane with fluoropolymer coating		
Membrane material / details in contact with the measured environment	AISI 316L, Hastelloy / 12X18H10T or AISI 316L		
Slip-on flange material		12X18H10T or AISI 316L	steel 09Г2С or steel 20 coated
Mounting with measuring device	direct mounting, through the capillary line		

Welded diaphragm seals	RSM-S	RSM-310
Connection type	fitting connection	fitting connection with filling valve and flushing port
Pressure range	-0,1…40 MPa	-0,1…60 MPa
Temperature range	-50…350 °C	-60…+200 °C
Membrane material / details in contact with the measured environment	AISI 316L, Hastelloy / 12X18H10T or AISI 316L	
Mounting with measuring device	direct mounting, through the capillary line	

Coolers	OX 100-30	OX 100-50
Outer diameter of the fins	30	50
Maximum inlet temperature	280 °C	350 °C
Maximum outlet temperature	50 °C	50 °C
PN	40 MPa	40 MPa
Material	12X18H10T, steel 20, 09Г2С, 12X1МФ	

Impulse capillary lines
Temperature range: -60…300 °C
Capillary type size: 3x1, 4x1, 5x1, 6x1 mm
Pulse tube size: 10x1, 14x2, 16x3 mm
PN: 25 и 40 MPa
Material: 12X18H10T

TEMPERATURE MEASURING

KZ BY

-62°C

	Resistance Thermometer EnI-300	Thermocouple EnI-300
Sensor type	Pt100,Pt500, Pt1000 (α=0.00385, IEC 60751) 50П, 100П (α=0.00391, GOST 6651-2009) 50M, 100M (α=0.00428, GOST 6651-2009)	N, K, J, T, L (GOST R 8.585-2001)
Temperature range	-196 …+600 °C	-40 … +1250 °C
Tolerance Class / Sensitive elements Quantity	AA, A, B, C / 1, 2	1, 2 / 1, 2
Wiring / Hot junction	2-wire, 3-wire, 4-wire	ungrounded, grounded
Protection tube (Sensor sheath) material	12X18H10T, 10X17H13M2T	12X18H10T, 10X17H13M2T, 15X25T, 10X23H18, XH45Ю, AISI 310/316/321, Inconel 600, Nicrobel
Connection head material	aluminum, 12X18H10T, polyamide	
Explosion-proof marking	0Ex ia IIC T6 Ga X, 0Ex ia IIC T5 Ga X, 0Ex ia IIC T4 Ga X, 1Ex d IIC T6 Gb X, 1Ex d IIC T5 Gb X, 1Ex d IIC T4 Gb X	
Ingress protection, GOST 14254-2015	IP55, IP65 IP5X (without head)	

KZ BY

-50°C

	Resistance Thermometer EnI-300	Thermocouple EnI-300
Output signal	**4…20, 0…5 mA - analogue transmitter** **4…20 mA - microprocessor transmitter** **4…20 mA / HART (version 7.0)**	
Input signal	Pt100 (α=0.00385, IEC60751) 50П, 100П (α=0.00391, GOST 6651-2009) 50M, 100M (α=0.00428, GOST 6651-2009)	N, K, J, L (GOST R 8.585-2001)
Temperature range	-50…+200°C/50M, 100M -196…+600°C/ 50П, 100П, Pt100	-40…+1250°C/N,K -40…+600°C/L -40…+750°C/J
Required total system accuracy	±(0.15…1.0)%, not less than ±0.4°C – 50П, 100П, Pt100 ±0.5°C – 50M,100M	±(0.3…1.0)%
Explosion proofmarking	0Ex ia IIC T6 Ga X, 0Ex ia IIC T5 Ga X, 0Ex ia IIC T4 Ga X, 1Ex d IIC T6 Gb X, 1Ex d IIC T5 Gb X, 1Ex d IIC T4 Gb X	
Immersion length	60…4000 mm	60…20000 mm

Temperature Transmitter PI, PI-M
Analogue, microprocessor
Input signal: Resistance Thermometers, Thermocouples
Output signal: 4…20, 0…5 mA
Type B (DIN 43729) for mounting in Head

Announcement: EnI-3330 with output signal 4…20 mA / HART (version 7.0)

TEMPERATURE MEASURING

NEW

Thermowells	GT-701, -711	GT-702, -712, -703, -713	GT-704, -714
Type	tubular (threaded)	barstock (threaded) barstock (welded)	flange thermowells: - tubular, welded flange; - barstock, welded flange; - forged, no welding; - barstock or forget, lap flange (GOST 33259-2015, ASME B16.5 - Van Stone)
PN	up to 25 MPa	up to 50 MPa	PN 10...250 kgf/cm² GOST 33259-2015 Class 150...1500 ASME B16.5
Diameter	14...20 mm	16...35 mm	14…35 mm
Immersion length	up to 4000 mm	up to 630 mm	up to 4000 mm / tubular up to 630 mm / barstock
Material	12X18H10T, 10X17H13M2T, 15X25T, XH78T	12X18H10T, 10X17H13M2T; (12X1MФ, 09Г2С - GT-703, -713)	12X18H10T, 10X17H13M2T, 15X25T, XH78T

FLOW MEASURING

	Orifice plates	Tubeless Diaphragm
Type	DKS, DFK, DVS	DBS, DFS
DN	20…500 mm	50…1600 mm
PN	up to 32 MPa	up to 10 MPa
Method of selection	angular	angular, flange and tigradusny
Materials	12X18H10T, steel20, 09Г2С - cameras; 12X18H10T - disc	12X18H10T

	Flow Straightener SVT	Flow Conditioning UPP-D
GOST	8.586.2-2005	8.586.1-2005
Nominal Diameter DN	50…1000 mm	50…1000 mm
Nominal pressure	up to 10 MPa	up to 10 MPa
Materials	12X18H10T, steel 20, 09Г2С	12X18H10T, steel 20, 09Г2С
	3 versions with various options of joining (flange, welding)	the relative diameter of the narrowing device <0,67

FUNCTIONAL EQUIPMENT

Ex

Isolated Barriers	EnI-BIS-Ex		
	Series 100	Series 150	Series 1000
Type	passive		
Channel count	1, 2, 5	1	1, 2
Input	thermocouples; resistancethermometer; 0-5, 4-20, 0-20 mA; HART; “relay contact output“; RS-485, RS-422, RS-232	thermocouples; resistancethermometer; 0-5, 4-20, 0-20 mA; HART; “relay contact output“	thermocouples; resistancethermometer; 0-5, 4-20, 0-20 mA; HART; “relay contact output“; RS-485, RS-422, RS-232
Explosion protection	[Ex ia Ga] IIC/IIB, [Ex ib Gb] IIC/IIB	[Ex ia Ga] IIC/IIB, [Ex ib Gb] IIC/IIB	[Ex ia Ga] IIC/IIB, [Ex ib Gb] IIC/IIB
Mounting	switchboard mounting, on DIN-rail, on the wall	on DIN-rail, on the wall	on DIN-rail

NEW

+70°C

Galvanic isolation modules	EnI-3201-AO	EnI-3230-AO	EnI-3201-AI	EnI-3210-AI
Connection	control of regulators, electric positioners, valves, current loop indicators 0…20, 4…20 mA		transmission of signal currents 4…20, 0…20 mA from sensors, conversion to signals 0…5, 0…20 mA, 0...5, 0…10, 1…5, 2…10 B	
Channel count	1 or 2	1 or 2	1 or 2	1, 2 or 3
Input signal	4…20 mA/HART	4…20/0…20 mA, HART	4…20 mA/HART	
Output signal	4…20 mA/HART	4…20/0…20 mA	4…20 mA/HART	
HART-signal transmission	one-way	two-way	one-way	one-way
Case width	22,5 mm	12,5 mm	22,5 mm	12,5 mm
Power connection	TBUS			

+70°C

+70°C

TBUS devices	Power supply and bus control module TBUS EnI-610	Power supplies BPI-24-TBUS
	Power over TBUS to two independant source of power	Input voltage 90...265 V (~), 125...370 V (—)
	Voltage monitoring and control error on TBUS	Output voltage 24 B (current up to 1 A). Possibility parallel connection
	Relay output sand 3 fault LEDs	Ability to adjust the output voltage in the range of ±10%
	Input / output voltage: 18…40 V(—)	Channel count 1
	Maximum load current: 4 A	Mounting on DIN-rail, TBUS

FUNCTIONAL EQUIPMENT

Ex SIL KZ BY

Isolated Barriers	EnI-BIS-Ex		
	Series 200	Series 300	Series 3000
Type	aktive	aktive with galvanic isolation	
Channel count	1, 2	1	1, 2
Input	0...5, 4...20, 0...20 mA	0...5, 4...20, 0...20 mA	0...5, 0...10, 1...5, 2...10 B; 0...20, 4...20 mA; 4...20 mA/HART; NAMUR; RS-485, RS-422; “relay contact output“
Input voltage	23,5...24,5 V 32,4...39,6 V	21,6...26,4 V 18…40 V	18…40 V, power supply connection by TBUS
Explosion protection	[Ex ia Ga] IIC/IIB, [Ex ib Gb] IIC/IIB	[Ex ia Ga] IIC/IIB	[Ex ia Ga] IIC/IIB
Mounting	on DIN-rail, on the wall	on DIN-rail, on the wall	on DIN-rail, TBUS

+70°C

EnI-3220-AI	EnI-3230-AI	EnI-3240-AI	EnI-3101-DI	EnI-3110-DI	EnI-3120-DI
transmission of signal currents 4…20, 0…20 mA from sensors, conversion to signals 0…5, 0…20 mA, 0...5, 0…10, 1…5, 2…10 B			connections of end sensors, buttons, frequency outputs of flowmeters, sensors with a NAMUR-signal		
1 or 2	1 or 2	1 input, 2 outputs	1 or 2	1	1 or 2
0…20 or 4…20 mA/HART			discrete signal		
0…20, 4…20 mA/HART, 1…5/2…10 V, 0…5/0…10 V			open collector, electromechanical relay contact		open collector, electromechanical relay contact, microprocessor
two-way	two-way	two-way	no		
22,5 mm	12,5 mm	12,5 mm	22,5 mm	12,5 mm	22,5 mm
TBUS					

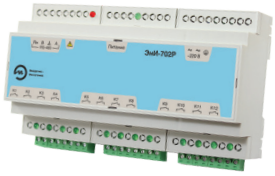
-60°C

-40°C

Power supplies	BPDM-Ex	BP, BPM	BPI	BPI-AKB
Input voltage	187...242 V	120...265 V	100…265 V	120…320 V
Output voltage/current	input signal: 4...20 mA output signal: 0...5, 4...20, 0...20 mA	12, 15, 18, 24, 36 V / up to 500 mA	5; 9; 12; 15; 24; 36; 48 V / up to 20 A	13,8; 24 V / up to 5 A
Channel count	1, 2 channels, Explosion protection [Ex ia Ga] IIC/IIB; [Ex ib Gb] IIC/IIB	1, 2, 4 and 8 channels	1	1, 2
Mounting	switchboard mounting, on DIN-rail, on the wall		on DIN-rail, on the wall	

FUNCTIONAL EQUIPMENT

Multiple Recorder EnI-702
Modular structure
Connection of up to 4 measurement modules and 4 control modules
Touch screen, diagonal 7”
USB-Host, RS-485



Discrete signal output module EnI-702R
12 channels of switching
Output: relay,optorelay, optosimistor
Connection to the display module according to RS485 (Modbus RTU)
Built-in counter of relay switching cycles

Measurement Module EnI-702I
6 galvanically isolated channels
Input: thermocouples, resistancethermometer, current signals, signals voltages
Individual setting by each channel
Connection to the display module according to RS485(Modbus RTU)

+70°C

NEW

+70°C

NEW

Relay modules	EnI-760	EnI-762
Channel count	4, 8,16, 32	1
Indication	LED indication of relay operation	
Contact group configuration	one changeover contact type C (SPDT)	
Built-in protection	from self-inducation emf of relay coils and from incorrect connection of power supply voltage	
Characteristics	two options for connecting the relay power with a common plus or a common minus	compact case 8,5 mm
Mounting	switchboard mounting, on a DIN-rail or the wall	on DIN-rail

Temperature transmitters EnI-802, -802M
Analogue, digital, up to 6 measurement channels
Input: thermocouples, resistancethermometer, current signals, signals voltage
Output signal: 0...5, 0...20, 4...20 mA
Explosion protection: [Ex ia Ga] IIC и [Ex ib Gb] IIC

Control and Measuring-regulators MIR-7200
1 channel measurement; up to 5 relay outputs control
Input: thermocouples, resistancethermometer, current signals, signals voltages
Output signal: 0...5, 0...20, 4...20 mA; RS-485, RS-232
Switchboard mounting; on DIN-rail; on the wall

COMMUNICATION TOOLS

+70°C

HART-modem	EnI-406-01, EnI-406-DIN
Number of connected devices	up to 15 devices on one line
Galvanic isolation	500 V
Using configurators	any HART configurator
Built-in resistor	250 ohm
Current loop supply	from built-in power supply
Modemsupply	from PC USB port

+65°C

NEW

+65°C

+65°C

Interface controlers	EnI-401-01, EnI-401-DIN	EnI-402, EnI-402-BP	EnI-408
Interface	RS-232/RS-485	USB/RS-485	USB/RS-232
Signals	RS-232 и RS-485: RxD, TxD, GND	built-in power supply for devices connected to the RS-485 line, voltage 12 V	RS-232: DTR, DSR, RxD, TxD, CTS, RTS, DCD, RI, SG
Galvanic isolation	1500 V	1500 V	1500 V
Data rate	up to 115,2 Kbit/s	up to 921,6 Kbit/s	up to 115,2 Kbit/s
Built-in terminating resistor	120 Ohm	120 Ohm	
Characteristics	version for DIN-rail mounting	fully compatible with USBv1.1	fully compatible with USBv1.1

NEW 2023

Thermotransducers EnI-300 with LCD	
Output signal	4…20 mA / HART (version 7.0)
Input signal	Pt100, Pt500 (α=0.00385, IEC 60751) 50П, 100П (α=0.00391, GOST 6651-2009) 50M, 100M(α=0.00428, GOST 6651-2009) N, K, J, L (GOST R 8.585-2001)
Explosion protection	Exd, Exia

Current loop indicator EnI-730	
Mounting: on a flat surface, DIN-rail, pipe, GSP connector DIN43650	
5-bit	
LED/ LCD-indication	

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ИТеК ББМВ

Энергия - Источник

Pressure transmitters
Manifolds
Diaphragm seals
Vessels
Impulse and capillary lines
Coolers
Orifice plates
Straighteners
Temperature transmitters
Thermocouples resistanse thermometers
Thermowells
Power supplies
Galvanic isolation modules
Isolated barriers
Recorders
Voltage converters
Communication tools

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