A&T Technologies

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MEASURING CONTROLLERS K15®

PROGRAMMABLE LOGIC CONTROLLERS

2026

CONTENT

PROCESSOR MODULE "K15.CPU.LX1"

DESCRIPTION

The high-performance K15.CPU.LX1 logic controller, programmable in the CoDeSys environment, is designed to solve a wide range of automation problems in oil production, refining, energy, mechanical engineering, and other industries. I/O scalability is achieved through the use of K15 series I/O modules, which connect to the PLC via DIN rail connectors.

MAIN ADVANTAGES

• Main development environment CoDeSys 3.5
• Possibility to program PLC using Linux OS in C/C++, Python and other languages.

• Based on a dual-core ARM Cortex-A72 processor
MPCore and quad-core ARM Cortex-A53, 64-bit CPU, 1.8 GHz

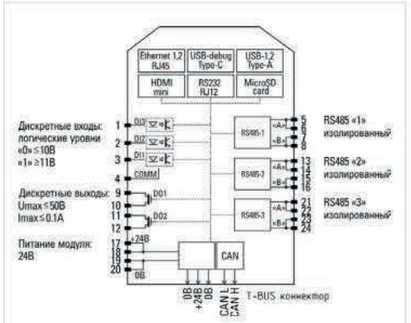
• System flash memory up to 32 GB (High-speed eMMC 5.1)
• Two 10/100 Base-T Ethernet ports
• Real time clock
• Possibility of connecting additional input/output modules

The appearance of the K15.CPU.LX1 controller

TECHNICAL CHARACTERISTICS

Electrical characteristics	
Supply voltage, V	24
Power consumption, no more than, W	15
Supply voltage protection	current limitation, from incorrect polarity
Calendar, real-time clock	non-volatile
Built-in memory, type eMMC 5.1, GB	16/32
RAM, type DDR3, GB	4
External non-volatile memory, FRAM type, KB	512
Number of discrete inputs, pcs.	3
Number of discrete outputs, pcs.	2

Communication characteristics	
10/100 Base-T Ethernet port Protocol Modbus TCP, OPC UA, pcs.	2
Isolated RS-485 ports Modbus RTU/Modbus ASCII protocol, pcs.	3
Isolated RS-232 port Modbus RTU/Modbus ASCII protocol, pcs.	1
USB 2.0, pcs.	2
USB debug, pcs.	1.
HDMI, pcs.	1
Micro SD card support, no more than GB Data exchange	128
interface with CAN input/output modules	CANopen
Data transmission indicators RX, TX via RS-485, RS-232, pcs.	8
Status Indicators (Status, Error)	ÿ
Discrete signal status indicators	ÿ



Connection diagram

terms of Use	
Temperature, °C	from -20 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	108x45.2x114
Weight, grams	500
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

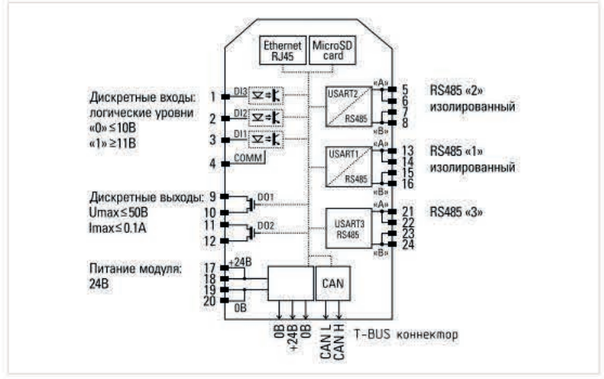
PROCESSOR MODULE "K15.CPU.H7"

DESCRIPTION

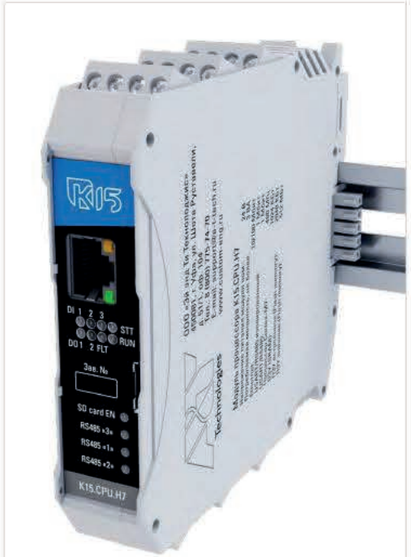
The K15.CPU.H7 controller is designed for building local systems of low and medium complexity, as well as distributed systems in the oil industry, agriculture, housing and utilities, energy, and other sectors. I/O scalability is achieved through the use of K15 series I/O modules, which are connected to the PLC via DIN rail connectors.

MAIN ADVANTAGES

• Based on the ARM® 32-bit, Cortex®-M7, 480 MHz processor
• Web interface • MicroSD
support • Non-volatile real-time
clock • Freely distributed development environment STM32CubeIDE
• C programming language



Connection diagram



The appearance of the K15.CPU.H7 controller

TECHNICAL CHARACTERISTICS

Electrical characteristics	
Supply voltage, %	24 V ±20
Power consumption, no more than, W Input	5
voltage protection	current limiting
Number of discrete outputs, pcs.	2
Number of discrete inputs, pcs.	3

Communication characteristics	
10/100 Base-T Ethernet ports, pcs.	1
Number of isolated RS-485 ports, pcs.	2
Number of non-isolated RS-485 ports, pcs.	1
Supported exchange protocols Interface for	ModBus RTU/TCP
data exchange with modules	CAN
RS-485 data transmission indicators, pcs.	3
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Protection class of the case	IP20
Fastening	DIN rail 35 mm

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

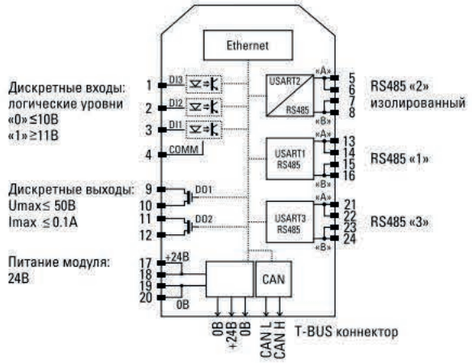
PROCESSOR MODULE "K15.CPU.F4"

DESCRIPTION

The K15.CPU.F4 controller is designed for building low-complexity local systems in the oil, agriculture, housing and utilities, energy, and other industries. I/O scalability is achieved through the use of K15 series I/O modules, which are connected to the PLC via DIN rail connectors.

MAIN ADVANTAGES

• Based on the ARM® 32-bit, Cortex®-M4, 168 MHz processor
• Web interface • Non-
volatile real-time clock • Freely distributed development
environment STM32CubeIDE • C programming language



Connection diagram

The appearance of the K15.CPU.F4 controller

TECHNICAL CHARACTERISTICS

Electrical characteristics	
Supply voltage, %	24 V ±20
Power consumption, no more than, W Input	5
voltage protection	current limiting
Number of discrete outputs, pcs.	2
Number of discrete inputs, pcs.	3

Communication characteristics	
10/100 Base-T Ethernet ports, pcs.	1
Number of isolated RS-485 ports, pcs.	1
Number of non-isolated RS-485 ports, pcs.	2
Supported exchange protocols Interface for	ModBus RTU/TCP
data exchange with modules	CAN
RS-485 data transmission indicators	ÿ
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

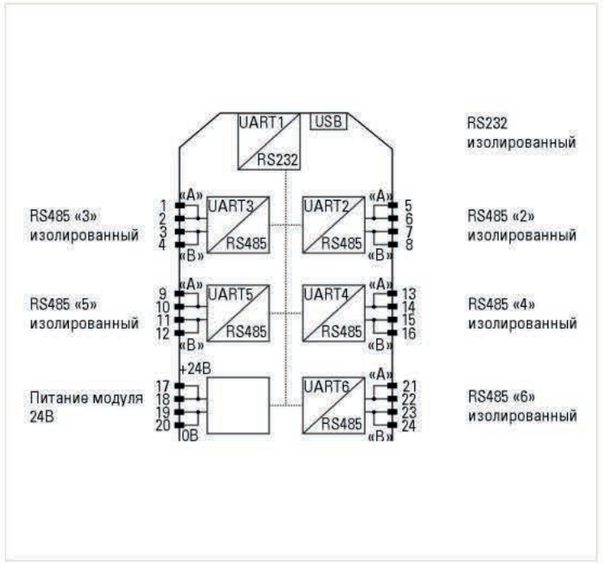
Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Protection class of the case	IP20
Fastening	DIN rail 35 mm

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

SERIAL INTERFACE MODULE "K15.SCM6"

DESCRIPTION

The K15.SCM6 serial interface module is designed to increase the number of communication interfaces on the K15.CPU.LX processor modules. Connection is via a USB 2.0 interface using an external cable.



Connection diagram

External appearance of the K15.SCM6 module

TECHNICAL CHARACTERISTICS

Galvanic isolation	Individual

Electrical characteristics	
Supply voltage, %	24 V ±20
Power consumption, no more than, W	1.5
Electrical strength of circuit insulation, V	1500

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

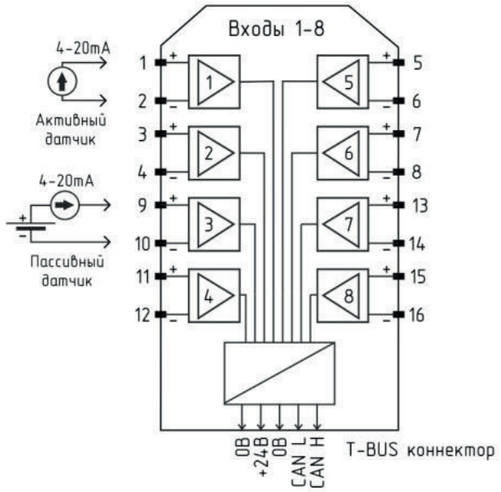
Communication characteristics	
Number of RS232 channels	1
Number of RS485 channels	5
Exchange speed, bits/sec	115200
Reception/transmission indication	ÿ
USB transmit/receive indicator 120 Ohm	ÿ
terminating resistors on the front panel, pcs.	5

Mechanical characteristics	
Dimensions (L x W x H), mm	107 x 22.5 x 136
Weight, grams	500
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG INPUT MODULE "K15.AI8"

DESCRIPTION

The K15.AI8 analog input module is used in conjunction with a processor module to increase the number of analog input channels. The input signal range is 4-20 mA.



Connection diagram

The appearance of the K15.AI8 module

TECHNICAL CHARACTERISTICS

Maximum number of pluggable modules per CAN bus, pcs.	126
Galvanic isolation of inputs	group
Protective functions of output circuits	from short circuit, overheating

Electrical characteristics	
Supply voltage, V Power	24 ±20%
consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of analog inputs, pcs.	8
Input signal range, mA	4-20
Limit of basic reduced error, %	0.1
Input signal type	unified current signal

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ

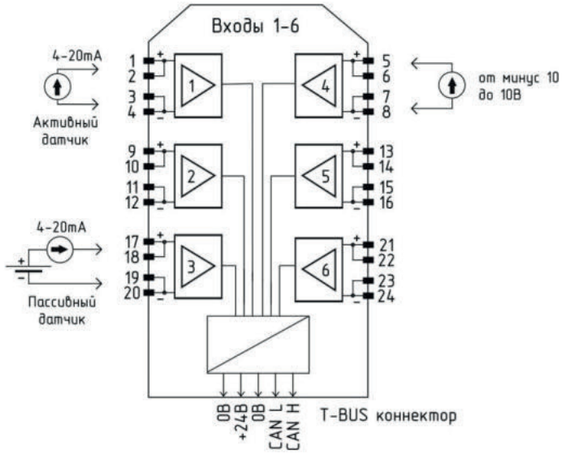
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG INPUT MODULE "K15.AI6"

DESCRIPTION

The K15.AI6 analog input module is used in conjunction with a processor module to increase the number of analog input channels. The input signal range is -20 ... +20 mA/-10 ... +10 V.



Connection diagram

The appearance of the K15.AI6 module

TECHNICAL CHARACTERISTICS

Galvanic isolation of inputs	group
Protective functions of output circuits	from short circuit, overheating

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of analog inputs, pcs.	6
Input signal type	current, voltage
Input current signal range, mA	from minus 20 up to plus 20
Limit of basic reduced error, %	0.1
Input voltage range, V	from minus 10 up to plus 10
Limit of basic reduced error, %	0.05

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ

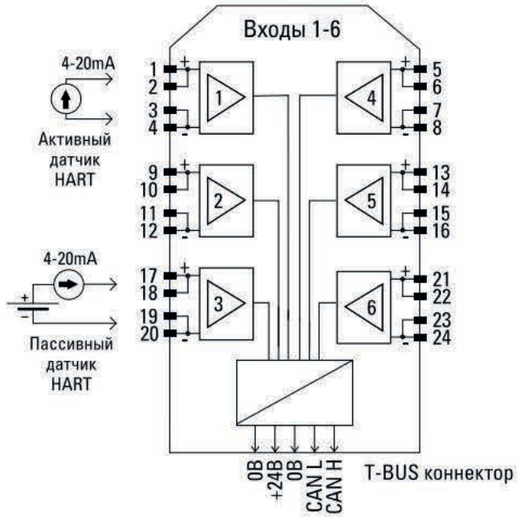
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG INPUT MODULE "K15.AI6.HART"

DESCRIPTION

The analog input module "K15.AI6.HART" is used together with the processor module to increase the number of channels
analog input.



Connection diagram

External appearance of the K15.AI6.HART module

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	group
ADC resolution, bits	16
Indication	status, channels, error
Number of channels	6
Hot swapping	There is
HART protocol support	There is
HART protocol version	5.0

Electrical characteristics	
Supply voltage, V	24
Current measurement range, mA	4…20
	0…20
Input resistance of current measurement circuits, Ohm	250
Limit of basic reduced error, %	0.1

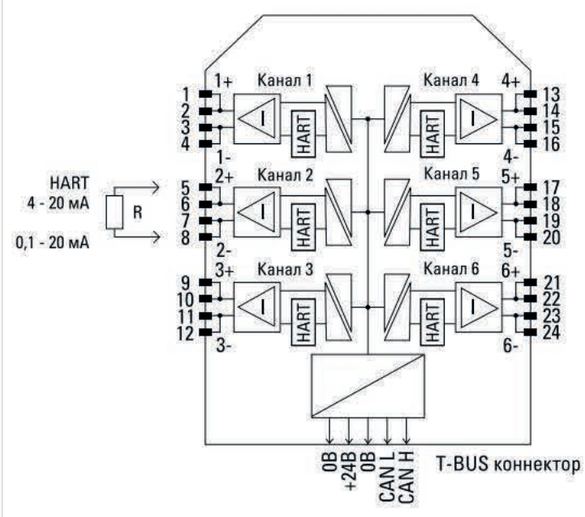
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail

ANALOG OUTPUT MODULE "K15.AO6.HART"

DESCRIPTION

The analog output module "K15.AO6.HART" is used in conjunction with a processor module to increase the number of analog output channels.



Connection diagram

External appearance of the K15.AO6.HART module

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	group
DAC resolution, bits	16
Indication	condition, channels, accident
Number of channels	6
Hot swapping	There is
HART protocol support	There is
HART protocol version	5.0

Electrical characteristics	
Supply voltage, V	24
Current measurement range, mA	4…20
	0…20
Input resistance of current measurement circuits, Ohm	0...1000
Limit of basic reduced error, %	0.1

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail

THERMAL RESISTANCE MEASUREMENT MODULE "K15.TR4"

DESCRIPTION

The K15.TR4 thermal resistance measurement modules are designed to convert the resistance values of thermistors into digital code and transmit it via the CAN interface.

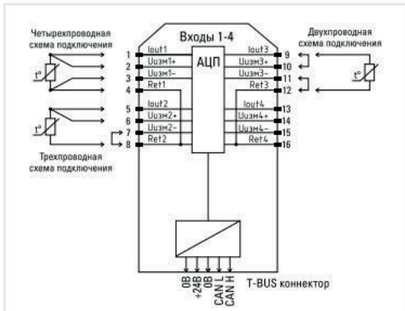
TECHNICAL CHARACTERISTICS

Type of galvanic isolation	group
Galvanic isolation, V	500
Maximum number of pluggable modules per CAN bus, pcs.	126
120 ohm termination resistor	Connection via DIP switch
Average service life, years Mean	10
time between failures, not less than, h	50,000
Electrical characteristics	
Supply voltage, V Power	24 ± 20%
consumption, W	3
Analog input channels	
Number of inputs, pcs	4
Communication characteristics	
Number of CAN channels	1
Exchange protocol	CAN OPEN

Types supported sensors	Range of measured temperatures, °C	Absolute temperature measurement error, Co
50 m	-180...+200	±0.5
Pt 50	-200...+850	±0.5
50 P	-200...+850	±0.5
100 m	-200...+200	±0.5
Pt 100	-200...+850	±0.5
100 P	-200...+850	±0.5
Pt 500	-200...+850	±0.5
500 P	-200...+850	±0.5
Pt 1000	-200...+400	±0.5
1000 P	-200...+400	±0.5

Mechanical characteristics	
Dimensions (L x W x H), mm	108 x 22.5 x 114
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

External appearance of the K15.TR4 module



Connection diagram

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Thermoelectric Power Measurement Module "K15.TC12"

DESCRIPTION

The K15.TC12 measurement modules are designed to measure and convert the thermo-EMF value from thermocouples into a temperature value and transmit it via the CAN bus.

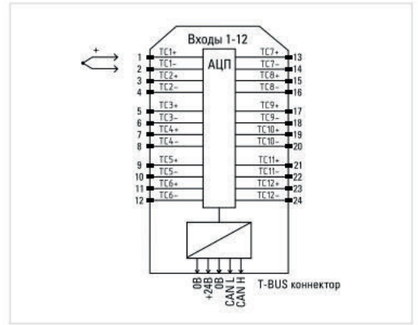
TECHNICAL CHARACTERISTICS

Type of galvanic isolation	group
Galvanic isolation, V	500
120 ohm termination resistor	Connection via DIP switch
Maximum number of pluggable modules per CAN bus, pcs. Average service life, years	126
Mean time between failures, at	10
least, h	50,000
Electrical characteristics	
Supply voltage, V Power	24 ± 20%
consumption, W	3
Analog input channels	
Number of inputs, pcs	12
Communication characteristics	
Number of CAN channels	1
Exchange protocol	CAN OPEN

Types supported sensors	Range of measured temperatures, °C	Absolute temperature measurement error, Co
E	-270...+1000	±3.0
J	-210...+1200	±3.0
T	-270...+400	±3.0
K	-270...+1370	±3.0
N	-270...+1300	±3.0
L	-200...+800	±3.0
M	-200...+100	±3.0
R	-50...+1760	±3.0
S	-50...+1760	±3.0
B	0...+1820	±3.0
A-1	0...+2500	±3.0
A-2	0...+1800	±3.0
A-3	0...+1800	±3.0

Mechanical characteristics	
Dimensions (L x W x H), mm	108 x 22.5 x 114
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

External appearance of the K15.TC12 module



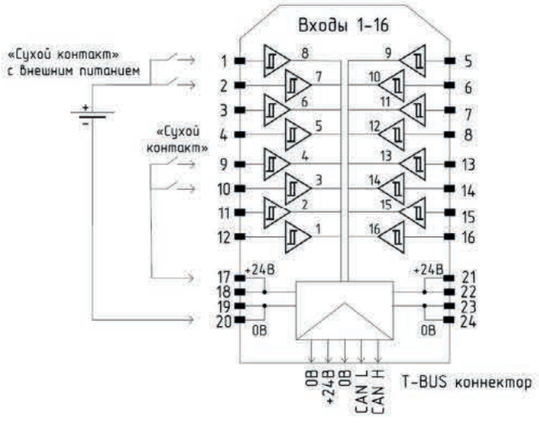
Connection diagram

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

DIGITAL INPUT MODULE "K15.DI16"

DESCRIPTION

The discrete input module "K15.DI16" is used together with the processor module to increase the number of discrete input channels.



Connection diagram

External appearance of the K15.DI16 module

TECHNICAL CHARACTERISTICS

Maximum number of connections modules per one CAN bus, pcs.	126
Galvanic isolation of inputs	group
Input anti-bounce filter, ms	0-10

Electrical characteristics	
Supply voltage, %	24 V ±20
Power consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of discrete inputs, pcs.	16
Input signal range, V	0-36
Number of channels with maximum input signal frequency 2000 Hz, pcs.	8
Number of channels with maximum input signal frequency 8000 Hz, pcs.	8

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

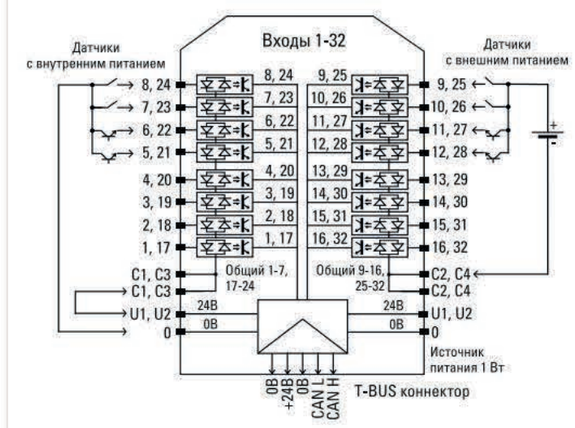
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

DIGITAL INPUT MODULE "K15.DI32"

DESCRIPTION

The discrete input module "K15.DI32" is used together with the processor module "K15.CPU.LX1" to increase the number of discrete input channels.



Connection diagram

External appearance of the K15.DI32 module

TECHNICAL CHARACTERISTICS

Maximum number of connections modules per one CAN bus, pcs.	126
Galvanic isolation of inputs	group, 4 groups 8 channels each

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	3
Electrical strength of circuit insulation, V	500
Input voltage protection	from polarity reversal
Number of discrete inputs, pcs.	32
Input signal range, V	0-60
Type of connected sensors	Electronic key, dry contact

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

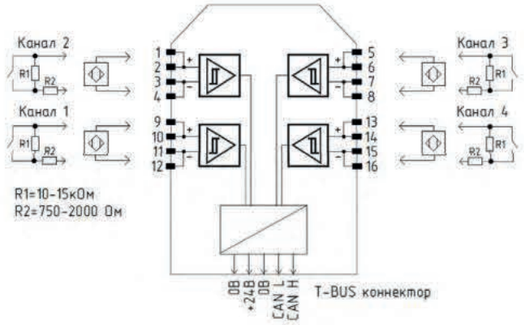
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x45x136
Weight, grams	500
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

DIGITAL INPUT MODULE "K15.DI4.NAMUR"

DESCRIPTION

The K15.DI4.NAMUR discrete input module is used in conjunction with a processor module to increase the number of discrete input channels with diagnostics of the status of discrete sensors, discrete sensors with circuit monitoring support, and discrete sensors with an output signal according to the NAMUR standard.



Connection diagram

External appearance of the K15.DI4.NAMUR module

TECHNICAL CHARACTERISTICS

Maximum number of connections modules per one CAN bus, pcs.	126
Galvanic isolation of inputs	group

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of discrete inputs, pcs.	4
Input supply voltage, V	8.2
Input signal type Namur	EN 60947-5-6

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

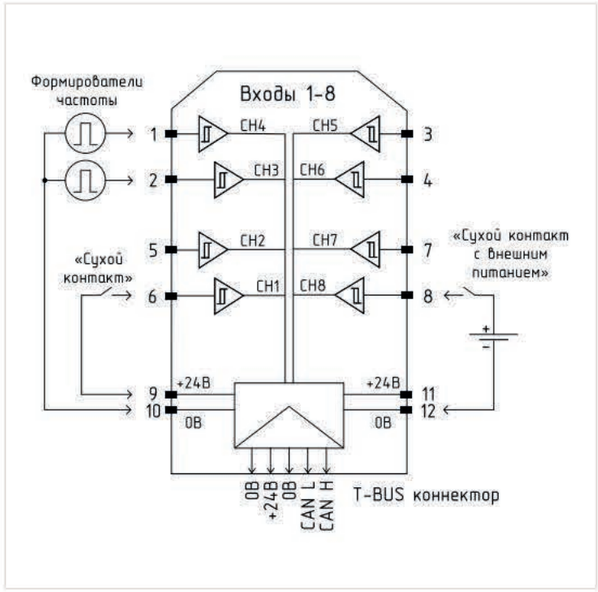
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

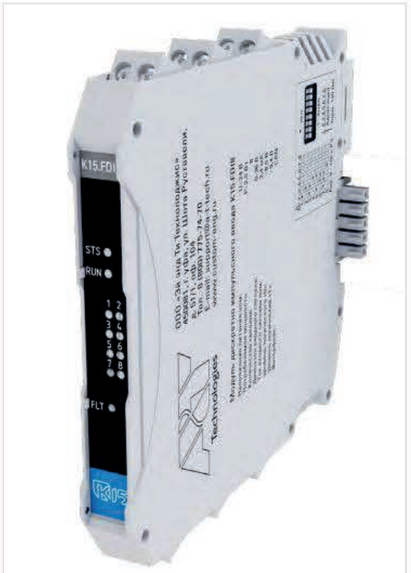
Discrete pulse input module "K15.FDI8"

DESCRIPTION

The K15.FDI8 discrete pulse input module is designed to collect data from built-in discrete inputs and transmit their values via the CAN bus. The discrete input channels can operate in pulse counting and measurement modes.
frequencies.



Connection diagram



External appearance of the K15.FDI8 module

TECHNICAL CHARACTERISTICS

Galvanic isolation	group
Input anti-bounce filter	ÿ

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ
Discrete indicators signals	ÿ

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	2
Number of discrete inputs, pcs.	8
Type of supported signals	voltage pulses ness, "dry con- tact" with external nutrition
Input signal range, V	0-35
Maximum input signal frequency, Hz	12,000
Maximum input signal current, mA	2.4

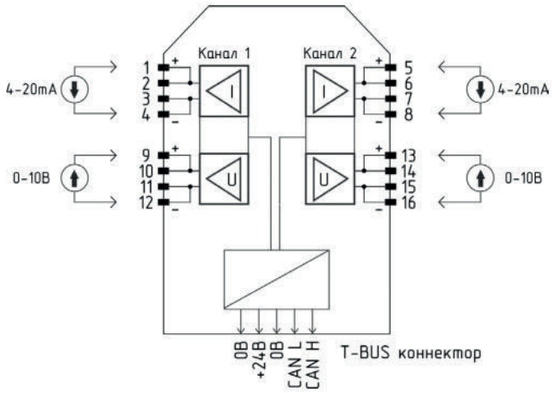
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	108x12.5x114
Weight, grams	300
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG OUTPUT MODULE "K15.AO2"

DESCRIPTION

The K15.AO2 analog output module is used in conjunction with a processor module to increase the number of analog output channels. The output signal is active: 0...+20 mA/-10...+10 V.



Connection diagram

The appearance of the K15.AO2 module

TECHNICAL CHARACTERISTICS

Maximum number of connections modules per one CAN bus, pcs.	126
Galvanic isolation of outputs	group
DAC bit depth	16

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of analog outputs, pcs.	2
Output signal type	current, voltage
Output current signal range, mA	0 to 20
Limit of basic reduced error for 4-20 mA, %	0.1
Output voltage range from 0 to 10 V, V	from minus 10 up to plus 10
Limit of basic reduced error for 0-10 V, %	0.05

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ

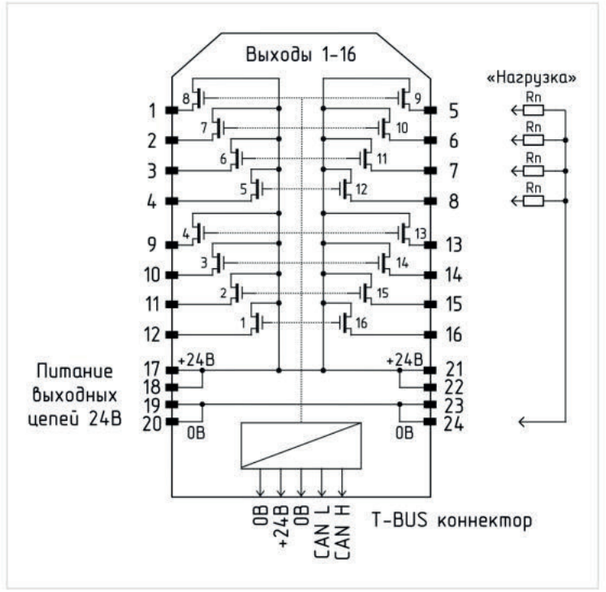
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

Discrete Output Module "K15.DO16"

DESCRIPTION

The K15.DO16 discrete output module is used in conjunction with a processor module to increase the number of discrete output channels. Discrete outputs are implemented as transistor switches.



Connection diagram

External appearance of the K15.DO16 module

TECHNICAL CHARACTERISTICS

Maximum number of connections modules per one CAN bus, pcs.	126
Galvanic isolation of inputs	group
Protective functions of output circuits	from short circuit, overheating
Discrete output type	integral keys on the field transistors

Electrical characteristics	
Supply voltage, V Power	24 ±20%
consumption, no more than, W	3
Input voltage protection	from polarity reversal
Number of discrete outputs, pcs.	16
Maximum DC switching voltage, V	50
Number of channels with maximum switching frequency 25,000 Hz, pcs.	4
Number of channels with maximum switching frequency 50,000 Hz, pcs.	4

Communication characteristics	
Communication interface	CAN
Status indicators (Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

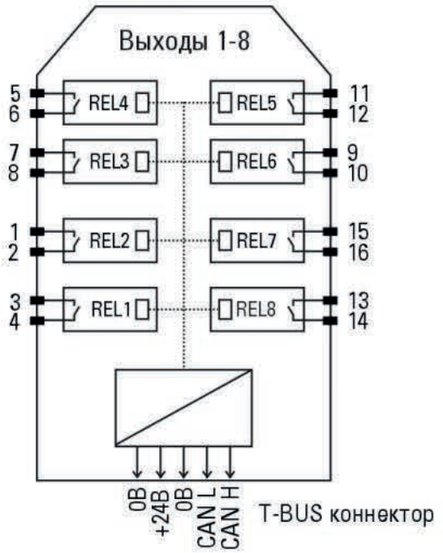
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107x22.5x136
Weight, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

RELAY OUTPUT MODULE "K15.RO8"

DESCRIPTION

The relay output module "K15.RO8" works in conjunction with the processor module "K15.CPU" to increase the number of relay output channels.



Connection diagram

External appearance of the K15.RO8 module

TECHNICAL CHARACTERISTICS

Maximum number of pluggable modules per CAN bus, pcs.	126
Galvanic isolation	Individual

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	3
Electrical strength of circuit insulation, V	1500
Number of relay outputs, pcs.	8
Switching voltage	30 B DC
Rated current, A	2

Communication characteristics	
Communication interface with the processor module	CAN
Status indicators (Status, Run, Fault)	ÿ
Output status indicators	ÿ

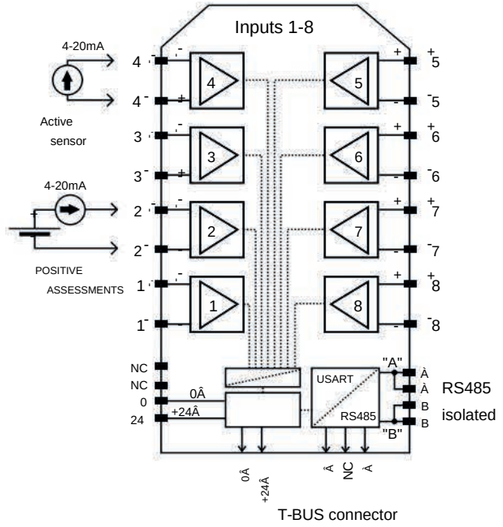
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	107 x 22.5 x 136
Weight, no more than, grams	500
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG INPUT MODULE "K15.AI8.RS"

DESCRIPTION

The K15.AI8.RS analog input module from the RS series is designed for measuring current in the 4-20 mA range and transmitting information via the RS-485 interface. It can be used as a standalone device without a processor module.



Connection diagram

Appearance of the K15.AI8.RS module

TECHNICAL CHARACTERISTICS

Maximum number of modules connected to one RS-485 bus, pcs.	128
Two-color channel status indication	ÿ
Factory reset button	ÿ
Software-configurable 120 Ohm termination resistor	ÿ
Galvanic isolation	Group
Types of protection	From overvoltage, current overload, reverse polarity at the power input, interface, etc.

Communication characteristics	
Communication interface	RS-485
Exchange protocol	Modbus RTU
RS-485 reception/transmission indication	ÿ
Status indicators (supply voltage, error, termination resistor)	ÿ
Analog channel status indicators	ÿ

Electrical characteristics	
Module supply voltage range, V	from 9 to 48
Power consumption, no more than, W	1.5
Number of analog inputs, pcs.	8
Input signal type	current
Conversion range, mA	4-20
Limit of basic reduced error %	0.1

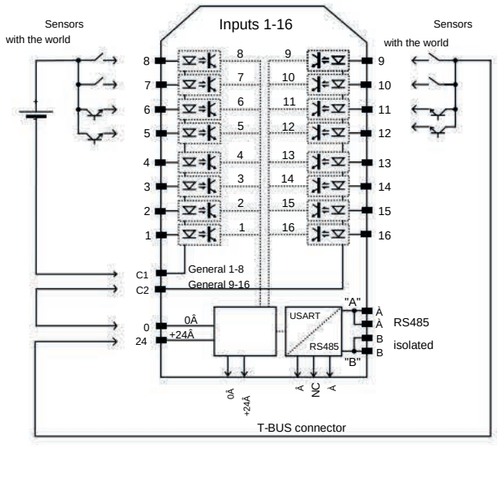
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	108x22.5x114
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

DIGITAL INPUT MODULE "K15.DI16.RS"

DESCRIPTION

The K15.DI16.RS discrete input module from the RS series is designed to receive discrete signals and transmit information via the RS-485 communication interface. It can be used as a standalone device without a processor module.



Connection diagram

Appearance of the K15.DI16.RS module

TECHNICAL CHARACTERISTICS

Maximum number of pluggable modules per RS-485 bus	128
Channel status indication	ÿ
Factory reset button	ÿ
Software-configurable 120 Ohm termination resistor	ÿ
Galvanic isolation	Group, 2 groups of 8 channels
Types of protection	From overvoltage, current overload, reverse polarity at the power input, interface, etc.

Communication characteristics	
Communication interface	RS-485
Exchange protocol	Modbus RTU
RS-485 reception/transmission indication	ÿ
Status indicators (supply voltage, error, termination resistor)	ÿ
Channel status indicators	ÿ

Electrical characteristics	
Module supply voltage range, V	from 9 to 48
Power consumption, no more than, W	1.5
Number of discrete inputs, pcs.	16
Type of connection sensors	electronic key, dry contact
Input signal range, V	from 0 to 60

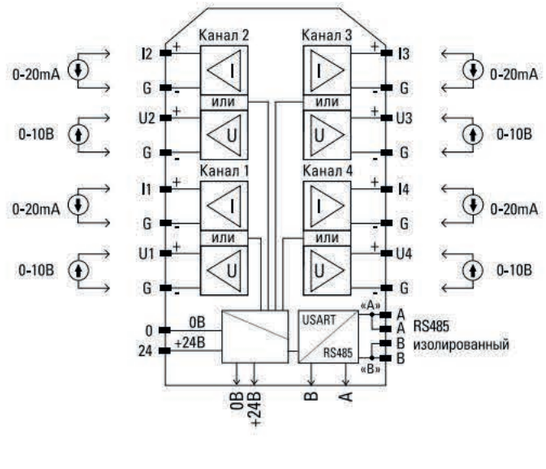
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	108x22.5x114
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

ANALOG OUTPUT MODULE "K15.AO4.RS"

DESCRIPTION

The K15.AO4.RS analog output module is designed to generate a current loop signal in the 0-20 mA range and a voltage signal in the 0-10 V range. It can be used as a standalone device without a processor module.



Connection diagram

Appearance of the K15.AO4.RS module

TECHNICAL CHARACTERISTICS

Maximum number of pluggable modules per RS-485 bus	128
Two-color channel status indication	ÿ
Factory reset button	ÿ
Software-configurable 120 Ohm termination resistor	ÿ
Galvanic isolation	Group
Types of protection	From overvoltage, current overload, reverse polarity at the power input, interface, etc.

Electrical characteristics	
Module supply voltage range, V	from 9 to 48
Power consumption, no more than, W	1.5
Number of analog outputs, pcs.	4
Output signal type	Current or voltage
Current conversion range, mA	0-20
Limit of basic reduced error, % Voltage conversion	0.1
range, V	0-10
Limit of basic reduced error, %	0.1

Communication characteristics	
Communication interface	RS-485
Exchange protocol	Modbus RTU
Indication of reception/ transmission RS-485	ÿ
Status indicators (supply voltage, error, terminating resistor)	ÿ
Status indicators analog channels	ÿ

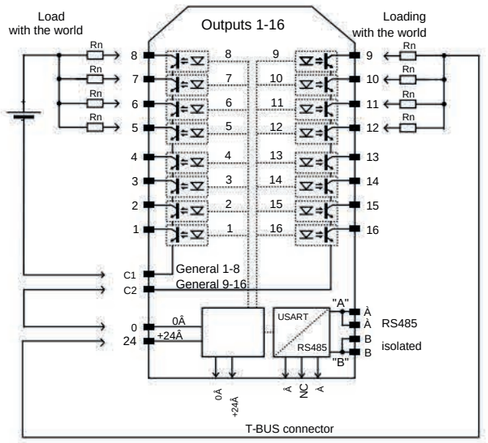
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	108x22.5x114
Weight, no more than, grams.	400
Housing protection rating.	IP20
Fastening	DIN rail 35 mm

Discrete Output Module "K15.DO16.RS"

DESCRIPTION

The K15.DO16.RS discrete output module from the RS series with an RS-485 communication interface is designed to control consumers and discretely controlled mechanisms. It can be used as a standalone device without a processor module.



Connection diagram

External appearance of the K15.DO16.RS module

TECHNICAL CHARACTERISTICS

Maximum number of pluggable modules per RS-485 bus	128
Channel status indication	ÿ
Factory reset button	ÿ
Software-connected 120 ohm termination resistor	ÿ
Galvanic isolation	Group, 2 groups 8 channels each
Types of protection	From overvoltage, current overload, reverse polarity at the power input, interface, etc.

Communication characteristics

Communication	RS-485
interface Exchange protocol	Modbus RTU
RS-485 reception/transmission indication Status	ÿ
indicators (supply voltage, error, terminating resistor)	ÿ
Channel status indicators	ÿ

Electrical characteristics

Module supply voltage range, V Power consumption,	from 9 to 48
no more than, W	1
Number of discrete inputs, pcs.	16
Type of connected sensors	open collector
Maximum switching DC voltage, V	60
Maximum switching current, A	0.15
Input status indication	ÿ

terms of Use

Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

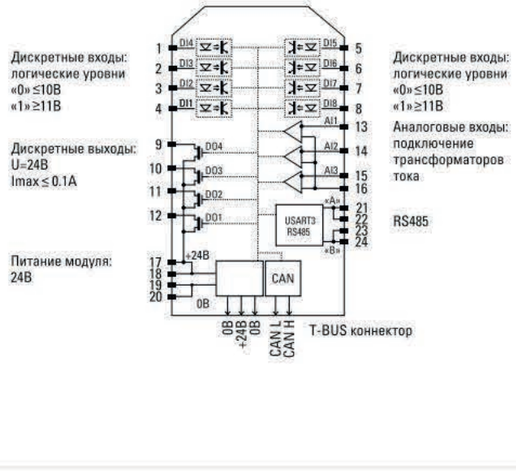
Mechanical characteristics

Dimensions (L x W x H), mm	108x22.5x114
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

MEASURING CONTROLLER "K15.MCU.F1"

DESCRIPTION

The K15.MCU.F1 measuring controller is designed for building control systems for actuators with a three-phase asynchronous electric drive. It is used as the master controller for the BU-PP flow switch control unit.



Connection diagram

The appearance of the K15.MCU.F1 controller

TECHNICAL CHARACTERISTICS

ARM® 32-bit CPU	ÿ
Cortex®-M3, 72 MHz	ÿ
Real time clock	ÿ
Possibility of connecting additional input/output modules	ÿ

Electrical characteristics

Supply voltage, V Power	24 ±20%
consumption, no more than, W	5
Input voltage protection	current limiting
Number of discrete outputs, pcs.	4
Number of discrete inputs, pcs.	8
Number of analog inputs, pcs.	3

Communication characteristics

Isolated RS-485 port	ÿ
RS-485 data transmission indicator Status indicators	ÿ
(Status, Run, Fault)	ÿ
Discrete signal status indicators	ÿ

Mechanical characteristics

Dimensions (L x W x H), mm	108x22.5x136
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

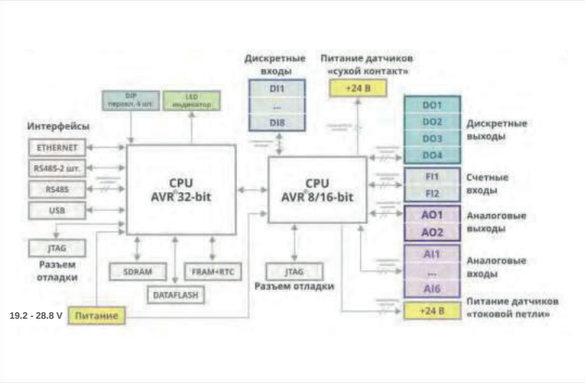
terms of Use

Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

CONTROLLER “K15.MCU.32”

DESCRIPTION

The measuring controller "K15.MCU.32" is designed for data collection and the creation of automated control systems for technological equipment in various industrial sectors.



Connection diagram

Appearance of the K15.MCU.32 controller

TECHNICAL CHARACTERISTICS

Execution	monoblock
Processor type	32-bit AVR, 66 MHz
Possibility of changing the network address Modbus RTU using DIP switch	ÿ
Real time clock	ÿ

Electrical characteristics

Supply voltage, V Power	24 ±20%
consumption, no more than, W	5
Number of discrete outputs, pcs.	4
Discrete output type	open collector
Number of discrete inputs, pcs.	8
Switching on with a common "+" or "-"	ÿ
Number of counting inputs, pcs.	2
Maximum signal frequency, kHz	10
Number of analog inputs, pcs.	6
Input signal range, mA	4-20
Limit of basic reduced error, %	0.1
Number of analog outputs, pcs.	2
Output signal range, mA	4-20

Communication characteristics

Isolated RS-485 port, pcs.	1
Unisolated port RS-485, pcs.	2
Ethernet interface 10/100 Base-T, pcs.	1
USB type B interface, pcs.	1
Status indicators (PWR, RTS, Rx/Tx)	ÿ
Discrete signal status indicators	ÿ

Mechanical characteristics

Dimensions (L x W x H), mm	180x160x51
Weight, no more than, grams	500
Fastening	DIN rail 35 mm

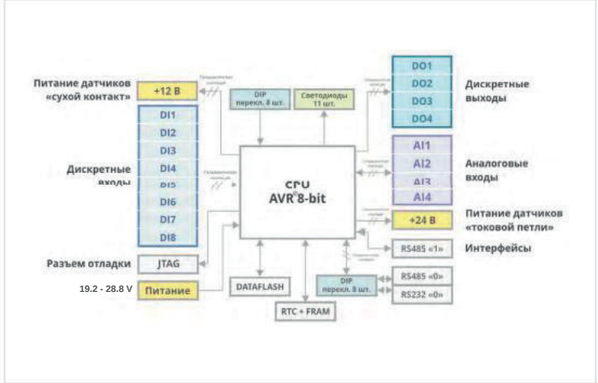
terms of Use

Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

CONTROLLER “K15.MCU.2561”

DESCRIPTION

The K15.MCU.2561 controller is designed to measure process parameters, receive and process signals, and generate output signals for automated control in real time.



Connection diagram

The appearance of the K15.MCU.2561 controller

TECHNICAL CHARACTERISTICS

Execution	monoblock
Processor type	8-bit AVR
Possibility of changing the network address Modbus RTU using DIP switch	ÿ
Real time clock	ÿ

Electrical characteristics

Supply voltage, V Power	24 ±20%
consumption, no more than, W	5
Number of discrete outputs, pcs.	4
Discrete output type	open collector
Number of discrete inputs, pcs.	7
Switching on with a common "+" or "-"	ÿ
Galvanic isolation	group
Number of analog inputs, pcs.	4
Input signal range, mA	4-20

Communication characteristics

Isolated RS-485 port, pcs.	1
RS-232 interface	COM port
Ethernet 10/100 Base-T interface, pcs. Status	1
indicators (PWR, RTS, Rx/Tx)	ÿ
Discrete signal status indicators	ÿ

Mechanical characteristics

Dimensions (L x W x H), mm	180x160x51
Weight, no more than, grams	450
Fastening	DIN rail 35 mm

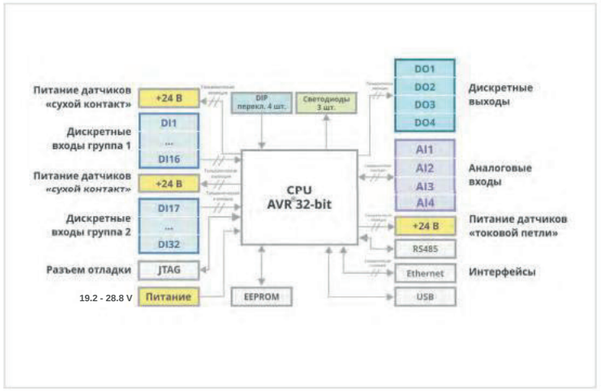
terms of Use

Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Universal Input/Output Module "K15.MCU.8314"

DESCRIPTION

The universal input-output module "K15.MCU.8314" is designed to measure unified current analog signals of 4-20 mA, collect data from the discrete inputs of the module, control the built-in discrete outputs with the transmission of measured values and the reception of control commands in RS-485 networks (ModBus RTU protocol) or Ethernet (Modbus TCP).



Connection diagram

External appearance of the K15.MCU.8314 module

TECHNICAL CHARACTERISTICS

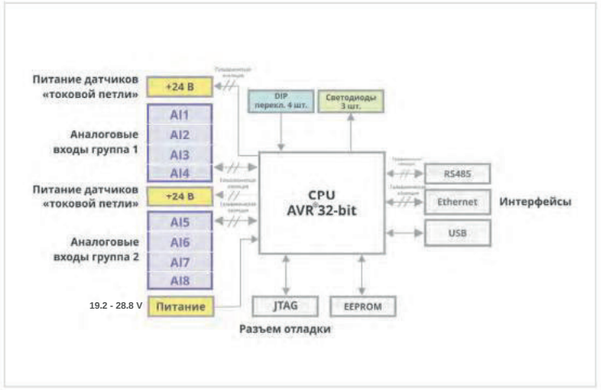
Execution	monoblock
Processor type	32-bit AVR, 66 MHz
Electrical characteristics	
Supply voltage, V Power	24 ±20%
consumption, no more than, W	11
Number of discrete outputs, pcs.	4
Discrete output type	solid-state relay
Galvanic isolation of discrete outputs	individual
Number of discrete inputs, pcs.	4
Switching on with a common "+" or "-"	group
Galvanic isolation	group
Number of analog inputs, pcs.	4
Input signal range, mA	4-20
Limit of basic reduced error, %	0.1
Communication characteristics	
RS-485 interface	ModBus RTU
Ethernet 10/100 Base-T interface USB type	ModBus TCP
B interface, pcs. Status indicators	1
(PWR, RTS, Rx/Tx) Discrete signal status indicators	ÿ
	ÿ

Mechanical characteristics	
Dimensions (L x W x H), mm	210x140x51
Weight, no more than, grams	500
Fastening	DIN rail 35 mm
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

ANALOG INPUT MODULE "K15.AI.8311"

DESCRIPTION

The K15.AI.8311 analog input module is designed to measure standardized current signals in the 0-24 mA range and transmit measured values via an RS-485 network (ModBus RTU protocol) or an Ethernet network (ModBus TCP protocol). Each of the eight analog inputs is galvanically isolated from other channels and the supply voltage.



Connection diagram

External appearance of the module "K15.MCU.8311"

TECHNICAL CHARACTERISTICS

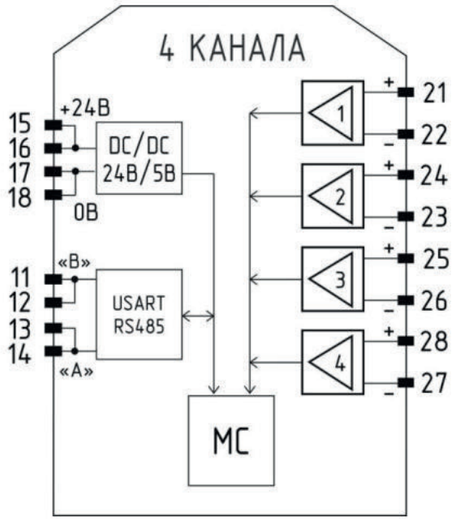
Execution	monoblock
Processor type	32-bit AVR, 66 MHz
Galvanic isolation	channel-by-channel
Isolated power supplies analog sensors 24 V, 3 W	ÿ
Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	8
Number of analog inputs, pcs.	8
Input signal range, mA	0.004-20
Limit of basic reduced error, %	0.1
Communication characteristics	
Isolated RS-485 interface	1 pc.
Ethernet 10/100 Base-T interface USB type	1 pc.
B interface Status indicators	1 pc.
(PWR, RTS, Rx/Tx)	ÿ

Mechanical characteristics	
Dimensions (L x W x H), mm	150x140x51
Weight, no more than, grams	500
Fastening	DIN rail 35 mm
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

ANALOG INPUT MODULE "K15.AI4"

DESCRIPTION

The K15.AI4 analog input module is designed for use in automated process equipment control systems and data collection in the oil production and refining industries, energy, rail transport, various industrial sectors, housing and utilities, agriculture, and hazardous industrial facilities.



Connection diagram

Appearance of the K15.AI4 module

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	group
Protective functions of input circuits	from short circuit, polarity reversal
ADC resolution	16
Possibility of changing the network address Modbus RTU using DIP switch	ÿ

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	1.5
Number of analog inputs, pcs.	4
Input signal range, mA	4-20
Limit of basic reduced error, %	0.1

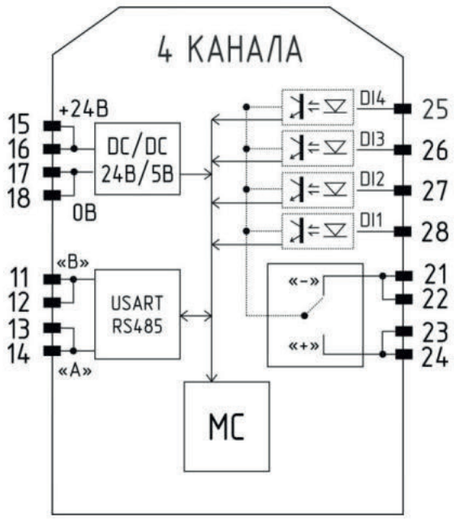
Mechanical characteristics	
Dimensions (L x W x H), mm	99x22.6x111
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

Communication characteristics	
RS-485 interface	Modbus RTU
Status indicators (PWR, RTS, Rx/Tx)	ÿ

DIGITAL INPUT MODULE "K15.DI4"

DESCRIPTION

The K15.DI4 discrete input module is designed for use in automated control systems for process equipment and data collection in the oil producing and refining industries, in the energy sector, in railway transport, in various areas of industry, housing and communal services, agriculture, and at hazardous industrial facilities.



Connection diagram

Appearance of the K15.DI4 module

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	group
Protective functions of input circuits	from polarity reversal
Possibility of connecting inputs with a common “+” or “-”	ÿ
Built-in isolated power supply for dry contact sensors, V	12
Possibility of changing the network address Modbus RTU using DIP switch	ÿ

Communication characteristics	
RS-485 communication interface	ModBus RTU
Status indicators (PWR, RTS)	ÿ
Two-color discrete status indicators signals	ÿ

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	2
Electrical strength of circuit insulation, V	1500
Input voltage protection	from polarity reversal
Number of discrete inputs, pcs.	4
Input signal range, V	0-24
Type of connected sensors	electronic key, dry contact
Maximum input signal frequency, Hz	100

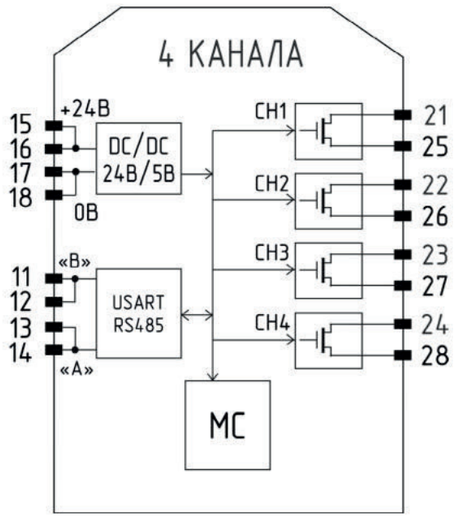
Mechanical characteristics	
Dimensions (L x W x H), mm	99x22.6x111
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Discrete Output Module "K15.PLR"

DESCRIPTION

The K15.PLR discrete output module is designed for use in automated process equipment control and data collection systems in the oil production and refining industries, energy, rail transport, various industrial sectors, housing and utilities, agriculture, and hazardous industrial facilities.



Connection diagram

Appearance of the K15.PLR module

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	channel-by-channel
Possibility of changing the network address Modbus RTU using DIP switch	ÿ

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W Electrical	2
strength of circuit insulation, V	1500
Input voltage protection	from polarity reversal
Number of discrete outputs, pcs.	4
Maximum switching voltage, V	60
Maximum switching current , A	0.5

Communication characteristics	
RS-485 communication interface	ModBus RTU
Status indicators (PWR, RTS)	ÿ
Discrete signal indicators	ÿ

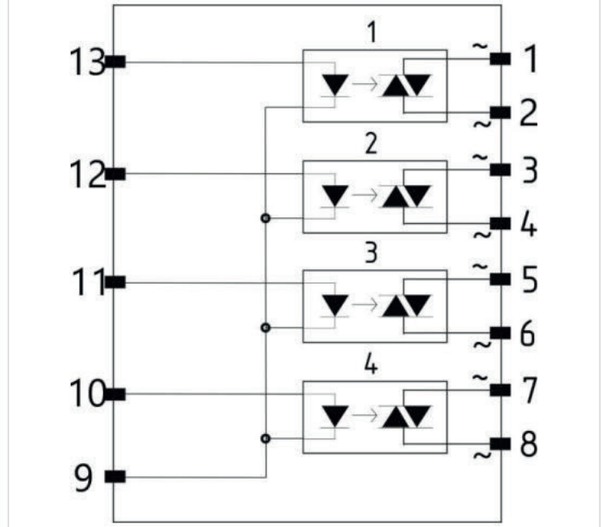
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	99x22.6x111
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

POWER RELAY MODULE "K15.PR4"

DESCRIPTION

The K15.PR4 power relay module is designed for switching AC loads. It can be used in automated control systems for process equipment in the oil production and refining industries, energy, rail transport, various industrial sectors, housing and utilities, agriculture, and hazardous industrial facilities.



Connection diagram

External appearance of the K15.PR4 module

TECHNICAL CHARACTERISTICS

Output signal filter (RC circuit)	ÿ

Electrical characteristics	
Number of discrete outputs, pcs.	4
Discrete output type	solid-state relays
Maximum switching voltage, V	~250
Maximum switching current, A	1
Insulation voltage, V	ÿ 2500
Maximum signal voltage management, B	ÿ 5
Maximum input signal current, mA	ÿ 10

Communication characteristics	
Discrete status indicators signals	ÿ

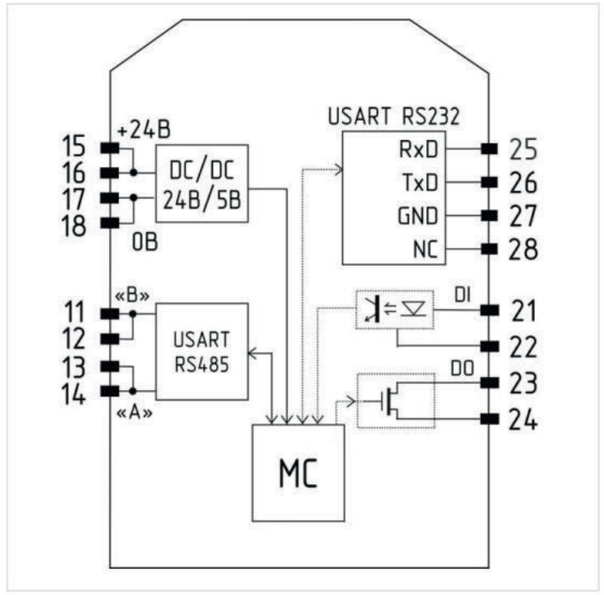
terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

Mechanical characteristics	
Dimensions (L x W x H), mm	72.5x127.5x51
Weight, no more than, grams	450
Fastening	DIN rail 35 mm

CONNECTION MODULE "K15.8916"

DESCRIPTION

The K15.8916 interface module is designed to convert the RS-485 interface to RS-232 with galvanic isolation between them. It features one discrete input channel and one discrete output channel.



Connection diagram

Appearance of the module "K15.8916"

TECHNICAL CHARACTERISTICS

Galvanic isolation of outputs	individual
Possibility of changing the network address Modbus RTU using DIP switch	ÿ

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	1.5
Input voltage protection	from polarity reversal
Number of discrete outputs, pcs.	1
Discrete output type	solid-state relay
Number of discrete inputs, pcs.	1
Type of connected sensors	electronic key, dry contact

Communication characteristics	
RS-485 communication interface	ModBus RTU
RS-232 communication interface	COM port
Status indicators (PWR, RTS, Rx/Tx)	ÿ
Discrete indicators signals	ÿ

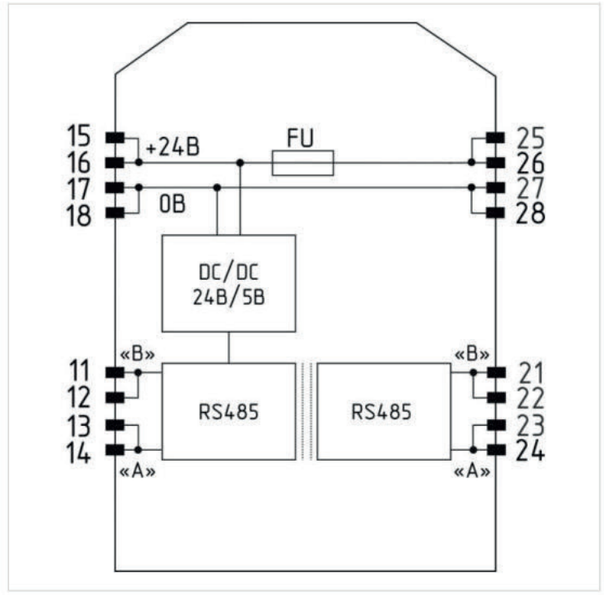
Mechanical characteristics	
Dimensions (L x W x H), mm	99x22.6x111
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

ISOLATING MODULE "K15.OS"

DESCRIPTION

The isolating module "K15.OS" is designed for galvanic isolation of the RS-485 interface.



Connection diagram

Appearance of the K15.OS module

TECHNICAL CHARACTERISTICS

Galvanic isolation of the interface RS-485	ÿ

Electrical characteristics	
Supply voltage, V	24 ±20%
Power consumption, no more than, W	2
Input voltage protection	from polarity reversal

Communication characteristics	
RS-485 communication	ModBus RTU
interface Status indicators (PWR, RTS)	ÿ

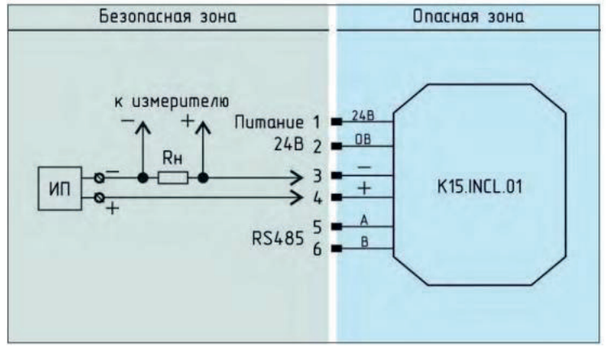
Mechanical characteristics	
Dimensions (L x W x H), mm	99x22.6x111
Weight, no more than, grams	400
Degree of protection of the case	IP20
Fastening	DIN rail 35 mm

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90

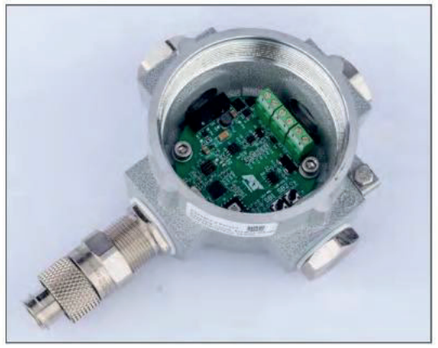
FLOAT POSITION INDICATOR "K15.0001.INCL.1Ex db IIC T6 Gb"

DESCRIPTION

The K15.0001.INCL.1Ex db IIC T6 Gb float position indicator is designed to measure the tilt angle relative to the Earth's gravitational field normal. It is used as a primary transducer for measuring float rotation angles, relative tilt of surfaces, rods, and other objects rigidly connected to the sensor. It is housed in an explosion-proof enclosure.



Connection diagram



Appearance of the float position indicator "K15.0001.INCL.1Ex db IIC T6 Gb"

TECHNICAL CHARACTERISTICS

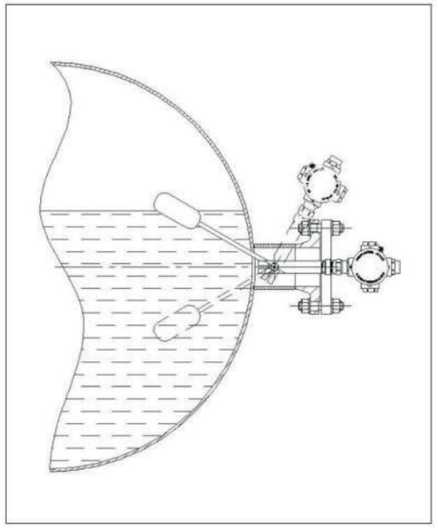
Protective functions of input circuits Range of	from polarity reversal
measured angular displacements, degrees	from 0 to 360
The maximum angle between the initial and end points, degrees	179
Position determination accuracy, degrees	0.6

Electrical characteristics	
Supply voltage, V	24 ±20%
Maximum power consumption, W	0.5

Communication characteristics	
Unified current loop, mA	4-20
RS-485 interface	ModBus RTU
RS-485 data transmission indicator	ÿ
Position adjustment indicators	ÿ

Intrinsically safe parameters	
Explosion protection marking of the enclosure	1Ex db IIC T6 Gb

terms of Use	
Temperature, °C	from -40 to +60
Humidity, %	from 10 to 90



Mechanical characteristics	
Dimensions (L x W x H), mm	179x122x76
Weight, no more than, grams	1000
Degree of protection of the case	IP66/IP67

FOR NOTES

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