

ENCM-3

remote terminal units

ENCM-3 is a smallsize and powerful RTU for remote monitoring and automation of distribution network substation. ENCM-3 has many possible applications in transport and industry where 2G/3G wireless data is required.

The full-featured version of RTU supports wireless data transmission in 3G/2G networks and has built-in GPS receiver, 2 RS-485, 1 RS-232, 1 Ethernet and number of I/O (analog and digital inputs, relay outputs).

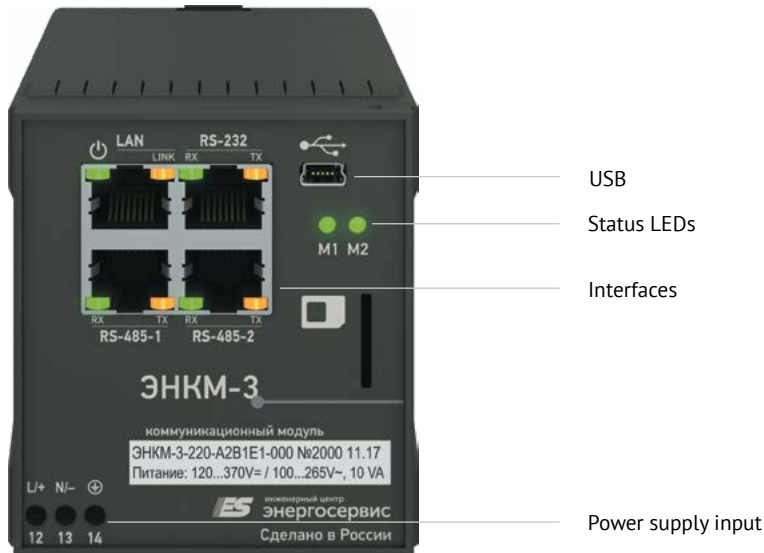
ENCM-3 provides data acquisition (digital signals and measurements) from various IEDs (e.g. multifunctional measuring transducers, relay protection and automation devices, power meters, I/O units) and transmits data further to SCADA system.

ENCM-3 can serve as an Ethernet-to-serial converter providing remote access to the field-level devices, e.g. for configuration.

Review of version

ENCM-3-X-A2B1E1-000

The simplest RTU ENCM-3 has basic interfaces set: 2 x 485, 1 x RS-232, 1 x Ethernet 100Base-TX. This is the most affordable solution for data acquisition at small site, where ied's number is less than 64.



ENCM-3-X-A2B1E1G-000, ENCM-3-X-A2B1E1GT-000

These versions of ENCM-3 device are equipped with a 2G/3G module for m2m solutions.

To accurately synchronize the time, use ENKM-3 with built-in GPS-receiver.



ENCM-3-X-A2B1E1GT-400

ENCM-3 with built-in digital inputs can be used at the applications for alarm system.



4 digital inputs

ENCM-3-X-A2B1E1GT-430

This version has 4 digital inputs plus has 3 relay outputs to control external equipment.

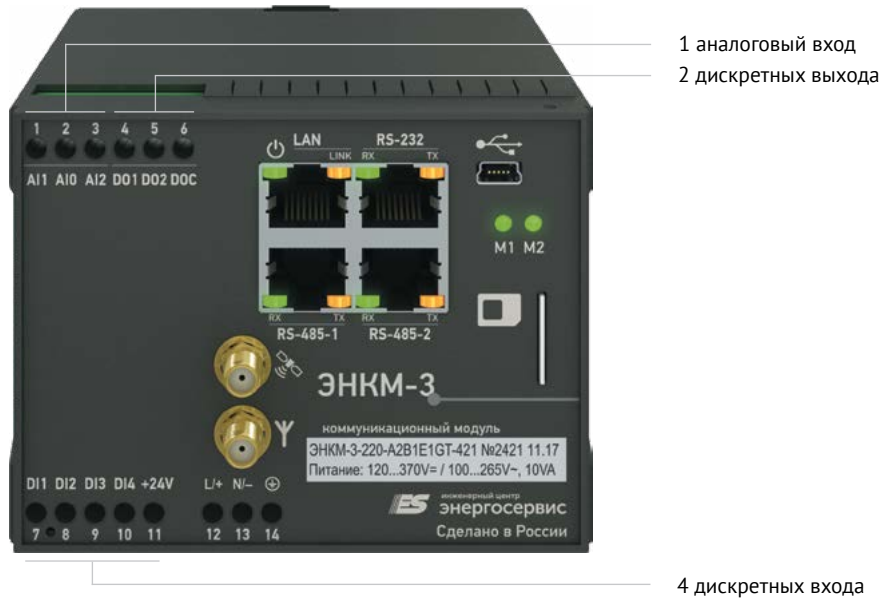


3 digital outputs

4 digital inputs

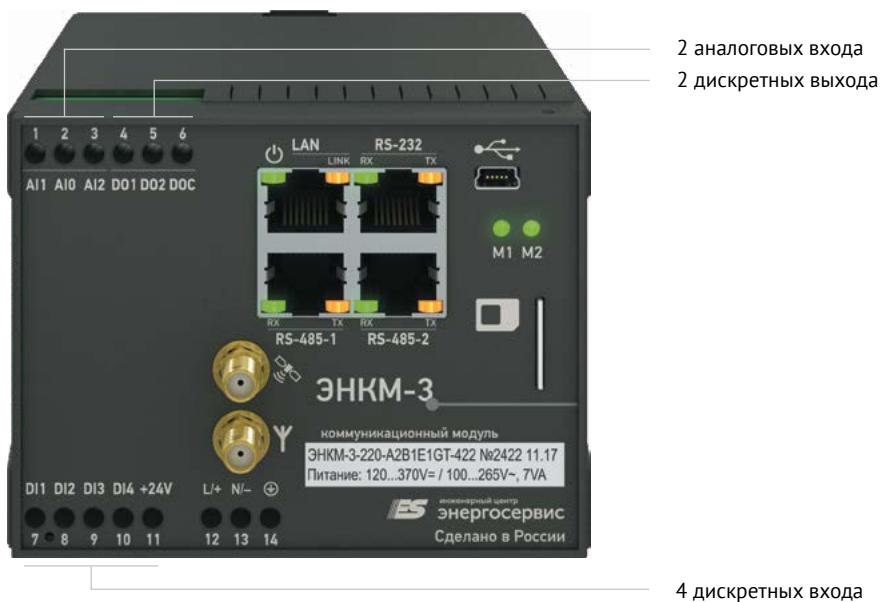
ENCM-3-X-A2B1E1GT-421

Plus 1 analog input for current signal -20 mA ...+20 mA.



ENCM-3-X-A2B1E1GT-422

The version differs from the previous one by the presence of two analog inputs 0...20 mA.



Specification

Data amount

2048 measurement values, 1024 digital signals, 512 commands

Polled devices

Maximum count of polled IEDs	64
Supported devices	IEC 60870-5-101, IEC 60870-5-103, IEC 60870-5-104, Modbus RTU, Modbus TCP
Polling ports	up to 3 asynchronous serial ports (RS-485/RS-232) 1 UDP port

Time sync

Built-in GPS-receiver	T option
External sources	sync with upper level RTU according to IEC 60870-5-101 C_CS_NA_1 (103), sync with time sync module ENCS-2, sync with 2 SNTP servers

Communications

RS-485 (2400...115200 b/s)	2
RS-232 (2400...115200 b/s)	1
Ethernet 100Base-TX	1
USB	1
Wireless	cellular networks 3G/2G

Amount of channels data transmitting to the upper level

Asynchronous serial ports (RS-485/RS-232)	up to 3 simultaneous connections, IEC 60870-5-101, Modbus RTU
TCP/IP	up to 8 TCP connections (Ethernet or cellular 2G/3G), IEC 60870-5-104, Modbus TCP

Built-in I/O

Digital inputs	4, dry contact, 24 V
Digital outputs	2 or 3 electromechanical relay outputs: 6 A (250 V AC), 3/0,35/0,2 A (30/110/220 V DC)
Analog inputs	1 × -20...+20 mA 2 × 0...20 mA

Operating conditions and design

Power supply	9...36 V DC or 120...370 V DC/ 100...265 V AC (45...55 Hz), 10 VA
Operating temperature	-40...+70 °C
Housing/mounting: IP40, DIN rail mounting	ENCM-3-x-A2B1E1-000: 75x70x110 mm ENCM-3-x-A2B1E1x-000: 75x70x119 mm ENCM-3-x-A2B1E1x-4XX: 75x100x119 mm

Ordering Information

ENCM-3-X-A2B1E1X-X

Options

-000 – w/o options

G-000 – 3G/2G

GT-000 – 3G/2G, GPS

GT-400 – 3G/2G, GPS, 4 digital inputs

GT-430 – 3G/2G, GPS, 4 digital inputs, 3 relay outputs

GT-421 – 3G/2G, GPS, 4 digital inputs, 2 relay outputs, 1 analog input (-20...+20 mA)

GT-422 – 3G/2G, GPS, 4 digital inputs, 2 relay outputs, 2 analog inputs (0...20 mA)

Power supply voltage

220 – 100...265 V AC (45...55 Hz) or 120...370 V DC

24 – 9...36 V DC

Options and accessories

GSM-3G.3

GSM-antenna on magnetic base (3 m feeder, SMA connector)

GPS-B3.10 (20/50), GPS-ET.50

Outdoor GPS antenna (10, 20 or 50 m feeder, SMA connector)

GPS-KP-MINI

Mounting bracket for GPS-antenna