

## INTERFACES

RS232

RS485

M-Bus

USB

Ethernet

2G/3G

GSM/GPRS

6 x Analog IN

2 x Analog OUT

4 x Discrete IN

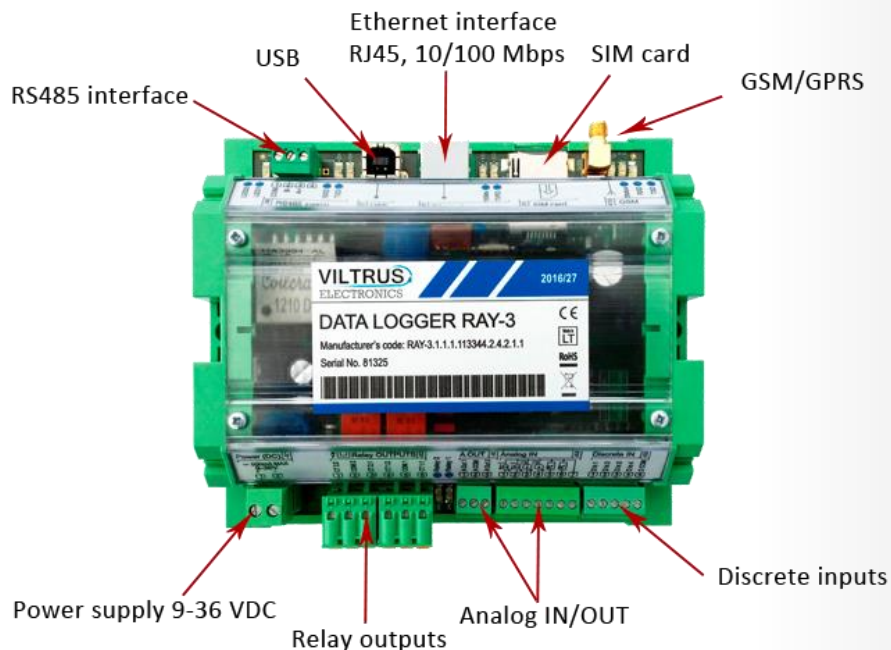
2 Discrete OUT



## FEATURES

- Independent data log with real time stamp (Real Time Clock)
- Reading data from M-bus meters (heat, water, gas, electricity...) via M-Bus interface
- Possibility to choose interfaces: M-Bus, RS232, RS485, USB, GSM/GPRS, Ethernet, Analog IN/OUT, Discrete IN/OUT
- Alarm limits tracing of analog and discrete inputs, logging in event archive, warning about alarms over GSM/GPRS/EDGE or UMTS/HSPA+, Ethernet and by sending SMS
- Alarms status of analog and discrete channels fixing
- Data from local device reading over RS232/RS485 (using Modbus RTU protocol) or USB
- Remote data sending over Ethernet or GSM/GPRS, 2G/3G using Modbus TCP/IP protocol
- Up to 6 analog inputs (voltage, current, resistance, PT100)
- Up to 2 analog outputs
- Up to 4 discrete inputs (contact / impulse / alarm)
- Up to 2 discrete relay outputs
- Internal battery ensure at least 1 hour operation, after power fail

RAY-3 data logger is dedicated for measuring of analog (voltage, current, resistance) parameters, for tracking the status of discrete inputs, formation of discrete output signals, archiving and sending data to local users/server over RS232/RS485 or USB and to remote users/server over Ethernet or/and GSM/GPRS or UMTS/HSPA+ using Modbus TCP/IP protocol.



## TECHNICAL SPECIFICATIONS

<b>Description</b>	<b>RAY-3 data logger</b>
CPU	CORTEX M4
Flash	archive storage up to 8 MB, independent data storage without power about 5 years
SD card support	micro SD card up to 8 GB
<b>Interfaces</b>	
RS232 (2 ports)	distance up to 15 m, speed up to 19,2 Kbit/s
RS485 (1 port)	distance up to 1,2 km, max 32 transivers, speed up to 19,2 Kbits/s
M-Bus (1 port)	up to 8 M-Bus devices
GSM/GPRS	4 band 850/900/1800/1900 MHz
UMTS/HSPA+	2 band, depending on market 850/1900MHz, 900/2100MHz or 800(850)/2100MHz
Ethernet	10/100 Mbps, RJ45, distance up to 100 m
USB	type B, ver. 2,0
Discrete IN	4 sink contact
Discrete OUT	2 relay 3A
Analog IN	6 resistance, voltage or current, reading 10 times per second
Analog OUT	2 voltage 0-10V, load up to 5mA
<b>Protocols</b>	
Modbus RTU, Modbus TCP/IP, IP, ICMP, UDP, TCP, DHCP, PPP, ARP, SNTP, IEC60870-5-104:2000, DynDNS, FTP server, FTP client, DNS client	
<b>General</b>	
Power supply	9-36 VDC
Over-voltage protection	>1000V
Internal battery	3,7V 750 mAh
<b>Certifications</b>	
Radio disturbance characteristics	EN 55011:2009/A1:2010; EN 55022:2010 EN 61000-4-2:2009; EN 61000-4-3:2006 EN 61000-4-3:2006/A1:2008; EN 61000-4-3:2006/A2:2010 EN 61000-4-4:2012; EN 61000-4-6:2009 EN 61000-4-8:2010; EN 61326-1:2013
Safety	EN 60950-1:2006 EN 60950-1:2006/A1:2010 EN 60950-1:2006/A11:2009 EN 60950-1:2006/A12:2011
<b>Physical characteristics</b>	
Dimensions	147x128x50 mm
Weight	400 g
Mounting type	on DIN rail
Protection type	IP20
<b>Climate conditions</b>	
Operating temperature	-25 to +60°C
Storage temperature	-40 to +60°C
Humidity range	5 – 95%, non-condensing
<b>LED indication</b>	
Power	
Charging of internal battery	
Status of discrete input, for each port	
Serial ports read/write for each port	
GSM/GPRS modem status	
Ethernet status	
<b>Other features</b>	
Real time clock	+
Warranty period	2 years

## ORDERING CODE

RAY-3.	A	B	C	D	E	F	G	H	I	J	K.	L.	M.	N	O.	P
0 – None 1 – RS485 2 – RS232																
0 – None 2 – RS232																
0 – None 4 – M-Bus																
0 – None 1 – Ethernet																
0 – None 3 – 3G modem 4 – 3G + GPS																
0 – None 1 – Current 0/4..20mA analog input 2 – Voltage -5...+5V analog input 3 – Voltage -10...+10V analog input 4 – Thermoresistor (Pt100) analog IN 5 – Thermoresistor (Pt1000) analog IN 6 – Voltage 0...+10V or Pt100, jumper switchable analog IN 7 – Resistance 0...10kΩ analog IN																
0 – None 1 – Current 0/4..20mA analog input 2 – Voltage -5...+5V analog input 3 – Voltage -10...+10V analog input 4 – Thermoresistor (Pt100) analog IN 5 – Thermoresistor (Pt1000) analog IN 7 – Resistance 0...10kΩ analog IN																
0 – None 1 – 1 voltage 0...+10V analog output 2 – 2 voltage 0...+10V analog output																
0 – None 4 – 4 discrete inputs																
0 – None 1 – 1 discrete relay output 2 – 2 discrete relay outputs																
0 – None 1 – Backup battery																
0 – None 1 – micro SD card																