



EXPLOSION PROOF ETHERNET RADIOMODEMS

The Solexy Ethernet radiomodem is a VHF/UHF high quality 500 mW radiomodem operating on 12,5 or 25 kHz channels available 169 MHz and 868 MHz band.

These products are developed in order to be a **licence free device**.

The Solexy Ethernet radiomodems are supplied complete with RS485 interface and Ethernet port plus optoisolated input and relay output installed in our explosion proof housing SWA and SWS series that allows a serial data transmission also in classified area Ex.

The SWA and SWS enclosure thanks to its rugged construction combined to ATEX and IECEx certificate achieves to have an Modbus RTU data transmission in classified area Ex.



FEATURES

- ✓ **RS485 AND ETHERNET SERIAL DATA TRANSMISSION**
Serial transmission on RS485 or Ethernet port transparent to the user plus optoisolated input and relay output may be used for alarms and/or actuation
- ✓ **WIDE RANGE OF TRANSMISSION OPTION**
Mirror (point to point), Modbus RTU over TCP, Modbus multi master and standard Radiomodem option completely transparent to the user also in case of complex route
- ✓ **MODBUS RTU OVER TCP**
Suitable for use as a Modbus RTU over TCP Server
- ✓ **LOW POWER**
Low power consumption in both RX and TX mode with selectable power saving mode by software and on/off switching controlled via DTR criteria
- ✓ **ADAPTIVE FREQUENCY AGILITY**
Adaptive Frequency Agility on 2 or 3 channels
- ✓ **WEB SERVER AND RADIO NETWORK STATUS**
Thanks to the web server integrated it is possible to configure the device and check the Radio Network Status through a dedicated utilities
- ✓ **ENCRYPTION TRANSMISSION DATA**
Secure transmission data thanks to AES (Advanced Encryption Standard) at 128 bit

APPROVALS

ATEX / IECEx CERTIFICATION

Zone 1, 2, 21 & 22



II 2G Ex db IIC T5-T4 Gb
II 2D Ex tb IIIC T110°C/T140°C Db
I M2 Ex db I Mb (SWS Only)

NOMENCLATURE

a - Enclosure

SWA Aluminum polyester powder coated
SWS Stainless steel AISI 316 (CF8M) electropolish

b - Device

51E Modbus RTU Radiomodem VHF 169 MHz,
500 mW RF power output
54E Modbus RTU Radiomodem UHF 868 MHz,
500 mW RF power output

c - Antenna connection ⁽¹⁾

03 n° 1 RXN antenna coupler (N Female) ⁽²⁾
04 n° 1 RXF antenna coupler (RP-SMA Female) ⁽²⁾

d - Cable entries

42 n° 4 3/4" npt-f (one used for antenna connection)
44 n° 4 M25x1.5 (one used for antenna connection)

e - Approvals

X0 IECEx & ATEX Gas and Dust (SWA only) ⁽³⁾
M0 IECEx & ATEX Gas, Dust and Mining (SWS only) ⁽³⁾

RS485
Ethernet
1 digital IN
1 digital OUT



RS485
Ethernet
1 digital IN
1 digital OUT

SPECIFICATIONS

		DEVICE	
GENERAL		51E	54E
Operating band		169.400 MHz 169.475 MHz	868.000 MHz 869.650 MHz
Canalization		12.5 25 50 kHz	25 50 kHz
Modulation		9K00F1D or 18K0F1D	
Radio data rate (Tx/Rx)		4800 bps @ 12.5 kHz 9600 bps @ 25 kHz 19200 bps @ 50 kHz	
Frequency stability		±2 ppm	± 1 ppm
Supply voltage		9-32 VDC	
Rx consumption (@12 VDC)		≈ 30 mA (RS232/485 relè off)	
Tx consumption (@12 VDC)		≈ 200 mA	
Relay outputs rating		1A@24V AC/DC resistive load (Normally Open)	
Digital inputs		5-24VDC - 3.5-20VAC Z _{INP} 2.2 kΩ (optoisolated)	
Ambient temp. range	SWA series	-30°C (-22°F) +70°C (+158°F)	
	SWS series	-30°C (-22°F) +65°C (+149°F)	
Housing material	SWA series	die cast aluminum polyester powder coated AISI 316 (CF8M) electropolished	
	SWS series		
Weather proof		IP 66/68	
TRANSMITTER		51E	54E
Output power		25/150/500 mW	25/150/500 mW
Frequency deviations		± 1.8 kHz @ 12.5 kHz ± 3.6 kHz @ 25 kHz	
Output power stability		± 1.5 dB	
RECEIVER		51E	54E
Type		CLASS 1 - LBT and AGILITY	CLASS 2 - LBT and AGILITY
Sensibility @ BER < 10 ⁻²	12.5 kHz	< -110 dBm	< -107 dBm < -105 dBm
	25 kHz	< -107 dBm	
	50 kHz	< -105 dBm	
SERIAL INTERFACE		51E	54E
Type		RS485	
Data rate		from 1200 to 57600 bps	
ETHERNET INTERFACE		51E	54E
Standard		IEEE802.3	
Connection		RJ45	
Data transmission		10/100 Mbps Auto-Detection	
DHCP		Server, Client	
Auto MDI/MDI-X		Yes	
Protocols		TCP/IP, Modbus RTU over TCP (server)	
Configuration		WEB Server, Windows Utility	

Notes:

⁽¹⁾ Antenna not included

⁽²⁾ Layout 2 (Consult dimensional drawings for specific layout)

⁽³⁾ Zone 1, 2, 21 & 22

AVAILABLE ACCESSORIES

MOUNTING BRACKET: KM-01: mounting kit for 2" pipe
(see dedicated data sheet) KM-02: universal mounting kit

Data contained in this specification are subject to change without notice