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БЕСПРОВОДНЫЕ ДАТЧИКИ

Технические характеристики на

XYR 3000



XYR3000 Wireless Family of Multiplexer I/O, Gateway's and Extensions Specifications and Technical Data Doc 34-XY-03-42

Product Introduction Overview

This document provides information relating to the components that comprise the XYR3000 Wireless Family of Multiplexer I/O, Gateway's and Extensions. The XYR3000 I/O Modules include models XYR3001, XYR3002, and XYR300L. All modules in the XYR3000 series include the same flexible and reliable operating protocol. Different versions will operate together in the one system. Each module provides different combinations of the following I/O:

- Digital inputs for switch devices such as limit switches, level switches, security sensors, motor starters, pushbuttons, analog inputs (0-10 / 0-20 / 4-20mA) for connecting transducers which measure parameters such as level, flow, pressure, temperature, vibration
- Digital output contacts for controlling devices such as motor drives, lights, alarms
- Analog outputs (0-10 / 0-20 / 4-20mA) for connection to meters or indicators to display measured parameters.
- Pulse inputs and outputs for transmitting pulse signals from flow meters, energy meters etc.

Attributes

- RF: 902-928 Mhz ISM band, FHSS
- Transmit radio power: 1 Watt
- Powering options: 110/220/24V, solar, Battery
- Range: 20 Miles LOS
- Diagnostics: Low Battery
- Event Driven Transmission Rates
- Local and Software Configurable
- 1 sec to 1 min transmit rate
- RSSI and Link test
- CRC check on all data
- Wire In Wire out and Wire in digital out possible

Applications

- Tank level monitoring
- Condition monitoring of equipment
- Utility plant alarms
- Effluent treatment plants
- Security and access-control
- Remote water pumps
- Monitoring of fire-fighting and safety systems
- Gas detection systems



Product Introduction Overview.. continued

The XYR3000 Wireless gateway products provide a wireless interface between various data buses used in process and automation applications. The Gateway includes an integral 900MHz license-free radio transceiver, and transfers transducer and control signals (I/O) using the highly secure and highly reliable WIB-smart radio protocol.

The XYR300G-E can handle multiple applications simultaneously.

Other Gateway features are:

- High security data encryption
- Automatic acknowledgment and error-correction,
- Peer to peer addressing, and
- Multiple path routing

The XYR300D Wireless modems provide RS232, RS485 connections by radio. The XYR300E and XYR401E are ideal solutions for Ethernet and serial connections in process control and automation applications (PLC's, DCS, SCADA, data acquisition, wireless video).

The XYR401E Wireless Modem is 802.11b/g compliant (2.4GHz license free frequency band) with a data rate of 108Mbps.

Wireless I/O Extensions lets you add your choice of I/O to XYR3001 and XYR3002 units.

Components

The XYR3000 Wireless Family consists of:

Field Mountable Multiplexer I/O's Modules

XYR3001: 4DI, 4DO, 2AI, 2AO, 1PI/O

XYR3002: 4DI, 1DO, 6AI, 4PI

XYR300L: AI, 2DI, T/C

Gateways

XYR300G-M: Modbus Gateway

XYR300G-E: Ethernet Gateway

Modems

XYR300D: Wireless Serial Radio Modem

XYR300E: Wireless Ethernet Modem

XYR401E: WiFi Wireless Ethernet Modem

I/O Extension Units

XYR3011: 16DI, 16DO, 2PI, 4PO

XYR3012: 8DI, 8DO, 8AI

XYR3013: 8DI, 8DO, 8AO

Field Mountable Multiplexer I/O's Modules

Introduction

The XYR3000 Family range of telemetry modules provide remote monitoring and control by radio or twisted-pair wire, over short or long distances. Transducer signals connected at one module (input signals) are transmitted to another module where the signals are re-created as output signals, or passed via RS232/485 to a host device such as a PLC or SCADA system.

Radio Communications

The XYR3000 I/O Modules use frequency-hopping spread spectrum and operates on the license-free 900MHz band. These products can be used without a radio license.

Radio Range

The operating radio range of the XYR3000 Series depends on obstructions in the radio path, the height above ground of the antennas, and the type of antennas used. Typical line-of-site ranges are:

20+ miles in USA/Canada

20 km in Australia/NZ

Longer distances may be achieved depending on local conditions.

The XYR3000 Series provides a measurement of both radio channel noise and radio signal strength to assist with installation and testing. Each XYR3000 also provides a repeater function. A module may be configured to retransmit a message on to a remote module which does not have a reliable radio path.

The repeater acts as an intermediate module between the two ends of the radio link. Messages may be repeated up to five times by intermediate repeater units, allowing very long radio paths to be achieved. Repeaters can also have their own I/O.

Configuration

The XYR3001 and XYR3002 modules are easy to configure, by connecting a PC to the module serial port and downloading a configuration file. Configuration software is provided with the modules. Configuration files may be uploaded from the modules for modification or archiving.

The XYR300L module can be configured via the serial port. Unidirectional units can be configured to network with Multi-I/O and Gateway units.

Diagnostics, Testing

The XYR3001 and XYR3002 modules provide diagnostic and test functions by connecting a PC terminal to the module. I/O and communication functions may be tested. The 905U module includes a radio strength measurement, which provides an indication of background noise and received radio strength. This feature allows radio paths to be tested without any additional test equipment.

The XYR300L Diagnostic features include:

Read input values, Write output values, Radio signal strength, Monitor communication messages.

Analog I/O

The XYR3001 modules have two inputs which will accept 4–20mA analog signals. One of these inputs has adjustable setpoints for controlling a digital output.

The XYR3002 modules have six inputs which will accept 0–20mA analog signals. Because of the inputs' high resolution, they may be used for 4–20mA signals or 0–10mA

The XYR300L modules have one input which will accept 0-20mA (4-20mA, 0-10mA) / 0-5V analog signals. Each analog input has adjustable setpoints for controlling digital outputs.

Analog Setpoints

The XYR3001 and XYR3002 High and low setpoints may be configured for the analog inputs to control a remote digital output contact.

The digital output will set ("on") when the analog input value drops below the low setpoint and will reset ("off") when the analog value exceeds the high setpoint.

The XYR300L High and low setpoints generate internal digital status. The setpoint status will set ("on") when the analog value drops below the low setpoint and will reset ("off") when the analog value exceeds the high setpoint.

Status transmitted as per digital input.

Setpoint values can be set via the front panel rotary switch or configuration software.

Field Mounted Multiplexer I/O's Modules Specifications

GENERAL		
	Model XYR3001, XYR3002	Model XYR300L
Temperature	-30 to +60 deg C	-40 to +60 deg C
Humidity	0 – 99%	0 – 99%
EMC	FCC Part 19, AS3548	89/336 EEC, EN 300 683, AS3548, FCC Part 15
Housing	DIN-rail Extruded Aluminum Case	DIN-rail Thermo-plastic enclosure
Dimensions	130 x 185 x 60mm (5.1 x 7.3 x 2.4 inches)	100 x 22 x 120mm (3.9 x 0.9 x 4.7 inches)
LED Indication	For power supply, WDT, Digital I/O	<i>Transmitter unit</i> Power/OK, Radio TX, DIN1, DIN2, Analog Setpoint status <i>Receiver unit</i> Power/OK, Radio RX, DO1, DO2, DO3, Communications Fail LED's also used to provide radio signal strength indication
Radio Transceiver/ Transmitter	Frequency Hopping spread spectrum 902 – 908 Mhz Approved to FCC Part 15.247, RS210 Maximum Line-of-sight range: 20 miles (4W ERP) depending on local conditions. Range may be extended by using up to five intermediate repeater units.	Frequency Hopping spread spectrum 902 – 928 Mhz, Sub Bands Available, 1W Approved to FCC Part 15.247, RS210 Maximum Line-of-sight range: 20 miles (4W ERP), 15km (1W ERP); 3000 ft/1000m in unobstructed industrial environments Range may be extended by using up to five intermediate repeater units.
Serial Port	RS232/RS485 serial port 9600 baud, 8 bits, no parity, 1 stop bit RS232 9pin DB9 female connector RS485 max cable distance 2000 m terminal connections	RS232 RJ45 female DCE, used for configuration and Diagnostics
Power Supply	Normal supply 12-24 VAC or 15-30 VDC, over voltage and reverse power protected Battery charging circuit included for 1.2-12 Ahr sealed battery. Battery supply 11.5-15.0 VDC Solar regulator for direct connection of solar panel (up to 30W) and solar battery (100Ahr) Internal monitoring of power fail, solar charge status, and battery voltage. These values may be transmitted to remote modules for monitoring. An internal DC/DC converter provides 24VDC 150mA for analog loop supply.	9 - 30 VDC. Receiver power consumption @ 12VDC - 250mA. 24VDC - 125mA Transmitter power consumption @ 12VDC - 600mA 24VDC - 300mA Analogue loop supply internally generated, 24VDC 30mA low power mode may be configured to cycle loop supply Internal monitoring of supply voltage - may be transmitted as an "input" (Transmitter unit only)

Inputs and Outputs		
	Model XYR3001, XYR3002	Model XYR300L
Digital Inputs	Opto-isolated (5000V) inputs suitable for voltage free contacts or NPN transistor, contact wetting current 5mA XYR3001/XYR3002: four inputs	N/A
Digital Outputs	XYR3001: four relay contacts, Form A AC 50V 5A/ DC 30V 2A XYR3002: one FET output 30VDC 500mA	
Analog Inputs	“floating” differential inputs, common mode voltage 27V, 24VDC for powering external loops provided, digital filtering 1 sec. XYR3001: two 4-20mA resolution 15 bit, accuracy 0.1% XYR3002: six 0-20mA resolution 12 bit, accuracy 0.1%	0-20 mA (4-20mA, 0-10mA) / 0-5V “floating” differential input, resolution 16 bit, accuracy < 0.1 %
Analog Outputs	current sink to common, max loop voltage 27V, max loop resistance 1000 ohms XYR3001: two 4-20 mA resolution 15 bit, accuracy 0.1%	N/A
Pulse Inputs	Specifications as per digital inputs Max pulse rate 100Hz, pulse width min 5ms XYR3001: one input (DI1) XYR3002: four input(DI1-4) - first pulse input (DI1) max 1000Hz, pulse width min 0.5ms	Two inputs, suitable for voltage free contacts / NPN, or voltage input < 2 VDC on / >4 VDC off Pulse Input max rate 10 Hz, 20 msec on time. Pulse counted as 2 x 16 bit register.
Pulse Outputs	FET 30VDC 500mA max 100Hz XYR3001: one	N/A
Thermocouple Input	N/A	Millivolt (-100mV to +100mV), J, K or T type linearization with on-board Cold-junction compensation Accuracy better than 1degC

XYR3000 Wireless Gateways

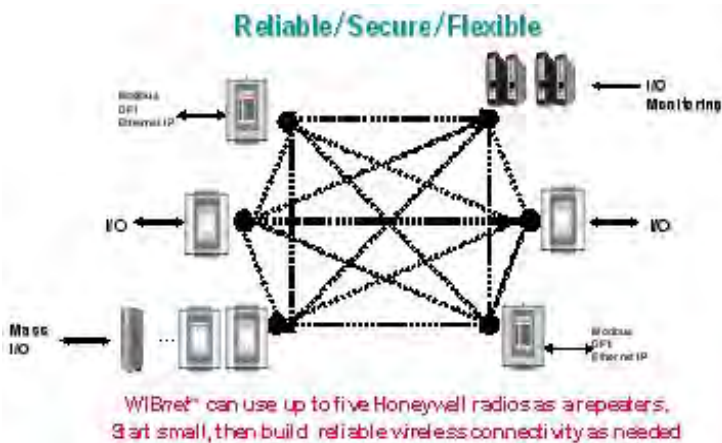
Introduction

The XYR300G Wireless gateway products provide a wireless interface between various data buses used in process and automation applications. The gateway includes an integral 900MHz license-free radio transceiver, and transfers transducer and control signals (I/O) using the highly secure and highly reliable WIB-smart radio protocol.

The WIB-smart radio protocol is designed for very efficient radio usage, with configurable communications based on event reporting (I/O change), update times and/or poll response.

Other features are:

- High security data encryption
- Automatic acknowledgment and error-correction
- Peer to peer addressing
- Multiple path routing



Configuration and Diagnostics

The XYR300G -M and XYR300G-E can be configured using free Windows software

Diagnostics include on-line read/write of I/O registers, radio signal strength values from remote units, and off-line testing of data bus protocol.

Applications

Used for Wire in Digital out configuration.

900MHz, FHSS, 1 Watt strength LOS 20 miles.

High security data encryption on the wireless link.

Interface between PLC's, DCS, HMI or SCADA and XYR 3000 wireless I/O units .

Supports WIBnet, peer to peer addressing and multi hop routing.

Has 8, on board discrete I/O which can be individually configured as inputs or outputs.

Radio communication supports event reporting, update time, read/write blocks and poll response.

Message acknowledgements and up to 4 retransmissions supported for each gateway.

Modbus Gateway (XYR300G-M): High capacity Modbus gateway that supports up to 4300 I/O points

- Modbus RTU, Master slave configuration, 300-19.2 kbits/sec

Ethernet Gateway (XYR300G-E): 10/100 Mbits/sec

- Modbus TCP class 0/1 and Ethernet IP level 2 I/O server

Radio Transmission

Radio communications can be configured for combination of event reporting (change-of-value), update time, read/write blocks and poll response.

Radio message includes system addressing, unit addressing, error-checking and configurable security encryption.

Communication control includes message acknowledgments and up to four re-transmissions.

Peer to peer addressing. Messages may be routed thru four intermediate repeater addresses.

Fail-to-transmit and fail-to-receive alarms configurable

Wireless Gateway Specifications

GENERAL		
	Model XYR300G-M (Modbus)	Model XYR300G-E (Ethernet)
Temperature	-40 to +140 deg F (-40 to +60 deg C)	30 to +140 deg F (0 to +60 deg C)
Humidity	0 – 99%	0 – 95%
EMC	EMC Compliant EN55022, EN50082-1, FCC Part 15	EMC Compliant EN55022, EN50082-1, FCC Part 15
Housing	DIN-rail Extruded Aluminum Case Removable terminal blocks for ease of module replacement. Terminals suitable for 12 gauge (2.5sqmm) wire.	DIN-rail Extruded Aluminum Case Removable terminal blocks for ease of module replacement. Terminals suitable for 12 gauge (2.5sqmm) wire.
Dimensions	130 x 185 x 60mm (5.1 x 7.3 x 2.4 inches)	100 x 22 x 120mm (3.9 x 0.9 x 4.7 inches)
LED Indication	For processor OK, radio TX and RX, serial TX and RX, active status	For processor OK, radio TX and RX, serial TX and RX, active status n
Radio Transceiver/	Frequency Hopping spread spectrum 902 – 928 Mhz Transmit Power 1W Approved to FCC Part 15.247, RS210 Maximum Line-of-sight range: 20 miles (4W ERP) depending on local conditions. 0.5 – 1.5 miles (1 – 2 km) in unobstructed industrial environments Range may be extended by using up to four intermediate repeater units. Data Rate 19.2 Kbaud with FEC (raw rate 115.2 Kbaud)	Frequency Hopping spread spectrum 902 – 928 Mhz Transmit Power 1W Approved to FCC Part 15.247, RS210 Maximum Line-of-sight range: 20 miles (4W ERP) depending on local conditions. 0.5 – 1.5 miles (1 – 2 km) in unobstructed industrial environments Range may be extended by using up to four intermediate repeater units. Data Rate 19.2 Kbaud with FEC (raw rate 115.2 Kbaud)
I/O Capacity	Modbus: 4300 I/O points (analog plus discrete)	Ethernet: 2048 bytes input and 2048 bytes output; up to 4300 discrete I/O points or up to 1024 analog in/122 analog out
Power Supply	9 - 30VDC / 12 – 24VAC. Battery charging circuit included for 12 V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal Current Drain: 12V 270mA, 24V 170Ma Add 5mA per active I/O Current drain during radio transmission – add to above: 12V 350mA; 24V 200mA	9 - 30VDC / 12 – 24VAC. Battery charging circuit included for 12 V back-up battery, max charge current regulated to 0.7A (>12V supply) Normal Current Drain: 12V 270mA, 24V 170Ma Add 5mA per active I/O Current drain during radio transmission – add to above: 12V 350mA; 24V 200mA
Radio Transmission	Modbus RTU (binary), master / slave configurable. RS232 or RS485, 300 – 19200 bits/sec.	10/100 Mbit/s, RJ45 connector, Transformer isolated interface Modbus/TCP class 0, class 1 and partially class 2 slave EtherNet/IP level 2 I/O Server Embedded Web system (Dynamic HTTP), on-board file system (1.4MB flash disc), user downloadable web pages through FTP server, Email functionality (SMTP)

XYR3000 Wireless Modems

XYR300D

The XYR300D Wireless Serial Radio Modem product provides RS232 or RS485 connections by radio. It is a low cost wireless alternative for linking PLC' data loggers, supervisory computers, and intelligent transducers.

The XYR300D has been designed to be easy to use and simple to install. It uses a 900MHz spread spectrum radio which does not require a radio license in many countries. The Module is fully integrated with radio, power supply, serial ports and microprocessor controller housed in a strong industrial aluminum case.

XYR300E/301E

The XYR300E Wireless Ethernet Modem product is an ideal solution for Ethernet and serial connections in process control and automation applications – PLC's, DCS, SCADA, data acquisition, wireless video. The XYR300E can handle multiple applications simultaneously.

The XYR300E uses the license-free 902-928MHz FHSS communications band and supports data communications to 115.2 Kbps.

The XYR301E uses the license-free 902-928MHz DSSS communications band and supports data communications to 54.2 Mbps.

The XYR301E has an Ethernet port [10/100 BaseT] as well as two serial ports [RS232 and RS485] – up to three independent data-bus connections simultaneously ... serial to serial, serial to Ethernet, point to multipoint, Modbus serial to Modbus TCP conversion.

XYR401E

The XYR401E WiFi Wireless Ethernet Modem product provides reliable and secure high speed wireless Ethernet connectivity across a broad range of applications in process and automation plants – PLC's, HMI, DCS, data acquisition, video devices and industrial PC's.

The XYR401E has an Ethernet port [10/100 BaseT] as well as two serial ports [RS232 and RS485] – up to three independent data-bus connections simultaneously ...Ethernet to Ethernet, serial to serial, serial to Ethernet, point to multipoint, Modbus serial to Modbus TCP conversion.

Configuration and Diagnostics

XYR300D

Configuration by freeware software package or by Hayes AT commands. Radio noise, signal strength and bit error rate [BER] diagnostics included. Radio signal strength value available on-line to host device.

XYR300E/301E

Configuration and diagnostics via the web-browser. Remote configuration and diagnostics via the wireless link. **XYR401E** HTTP with remote configuration via wireless link Web based system management – RF signal strength, Bit Error Rate [BER], connection monitoring and statistics.

PPP Protocol Access to diagnostics

Firmware upgradeable via serial port.

Wireless Modem Specifications

GENERAL			
	XYR300D Wireless Serial Radio Modem	XYR401E WiFiWireless Ethernet Modem	XYR300E Wireless Ethernet Modem
Temperature	-40 to +140 deg F (-40 to +60 deg C)	-30 to +140 deg F (-35 to +60 deg C)	-40 to +140 deg F (-40 to +60 deg C)
Humidity	0 – 99%	0 – 99%	0 – 99%
Approvals	EMC Compliant FCC Part 15 Class A	FCC 15.247, CE ETS 300 328, RSS210	FCC 15.247, RS210
Housing	DIN-rail Extruded Aluminum Case Removable terminal blocks for ease of module replacement. Terminals suitable for 12 gauge (2.5sqmm) wire.	DIN-rail Heavy Duty Painted Aluminum Case	DIN-rail Heavy Duty Painted Aluminum Case
Dimensions	114 x 185 x 30mm (4.5 x 7.3 x 1.2 inches)	114 x 140 x 30mm (4.5 x 5.5 x 1.2 inches)	114 x 140 x 30mm (4.5 x 5.5 x 1.2 inches)
LED Indication	For unit OK, radio Tx and Rx, serial Tx and Rx, DCD (comms OK)	Power/OK, Radio Tx and Rx, Radio link, LAN Link/Activity, Serial Activity, Digital I/O	Power/OK, Radio Tx and Rx, Radio link, LAN Link/Activity, Serial Activity, Digital I/O, LAN10/100Mbit Link
Radio Transceiver/	Frequency Hopping spread spectrum 902 – 928 Mhz Transmit Power 1W Approved to FCC Part 15 Cass A and FCC Part 15.247 Maximum Line-of-sight range: 20 miles (4W ERP) depending on local conditions. Range may be extended by using up to five intermediate repeater units in Controlled mode – unlimited repeaters in transparent mode. RF Data Transmission Rate: 19200 baud , 57600 baud, 115200 baud (selectable)	Direct Sequence Spread Spectrum [DSSS] 2.400 – 2.484GHz, 13 selectable zones Transmit Power: 15mW (11.76dBm) - 400mW (26dBm) Receiver sensitivity: < 8% FER 97dBm @ 1Mb/s -74dBm @ 54Mb/s Radio Range: 3 miles /5 km @ 400mW (26dBm) Line-of-sight range using high gain antennas with (4W ERP) Range may be extended by using repeater features. Dual SMA coaxial antenna connectors for antenna diversity	Frequency Hopping spread spectrum 902 – 928 Mhz Transmit Power 0.1 - 1W (20 – 30 dBm configurable System Gain:140dB Receiver sensitivity: -108 dBm @ 10-6 BER Data Rates: 19.2, 38.4, 100, 200 Kb/s or auto-rate selection Protocol: CSMA/CA with 32 bit CRC and auto-correction Radio Range: 60 miles /100 km Line-of-sight range using high gain antennas with(4W ERP) Range may be extended by using repeater features.
I/O Capacity	Input and Output buffers 2Kbyte	Discreet I/O; Input voltage-free contact / Output FET 30VDC 500 mA. Used to transfer input to output status or communications failure output	One I/O channel, Input voltage-free contact / Output FET 30VDC 500 mA. Used to transfer input to output status or communications failure output
Power Supply	10 – 30 Vdc or 10 – 24 Vac	9 – 30Vdc	10 – 30Vdc

GENERAL			
	XYR300D Wireless Serial Radio Modem	XYR401E WiFiWireless Ethernet Modem	XYR300E Wireless Ethernet Modem
Serial Port	<p>Standard data rates 1200 to 115200 baud</p> <p>RS232 and RS485 standard interface connections provided. Each connected to the same serial point. Serial interfaces are asynchronous non-return-zero (NRZ) format.</p> <p>Characters supported 7 or 8 data bits, even/odd/no parity, 1 or 2 stop bits.</p> <p>RS232 connection provides full duplex operation as a DCE device with RTS/cts hardware handshaking – standard D9 connector.</p> <p>RS485 connection provides half duplex operation for twisted-pair multidrop networks.</p> <p>Input and output buffers 2Kbyte</p>	<p>RS232 V.24 DCE 1.2 to 115.2 Kb/s RS485 1.2 – 230 Kbs</p>	<p>RS232 V.24 DCE 1.2 to 115.2 Kb/s RS485 1.2 – 115.2 Kbs</p> <p>Serial Server functionality provides multiple connectivity modes – serial to serial, serial to Ethernet, Modbus serial to Modbus TCP, and point to multipoint</p>
Ethernet	N/A	<p>10/100 BaseT RJ45, IEEE 802.3 compliant</p> <p>Bridge/router functions work with all Ethernet protocols</p> <p>Embedded protocols: TCP/ IP, UDP, ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET</p>	<p>10/100 BaseT RJ45, IEEE 802.3 compliant</p> <p>Bridge/router functions work with all Ethernet protocols</p> <p>Embedded protocols: TCP/ IP, UDP ARP, PPP, ICMP, HTTP, FTP, TFTP, TELNET</p>

XYR3000 I/O Extensions

Introduction

The Expansion I/O for XYR3000 wireless can be added to XYR 3001 and XYR3002 series. Using the RS485 Serial port for configuration, you have your choice of I/O:

I/O Extension Units

XYR3011: 16DI, 16DO, 2PI, 4PO

XYR3012: 8DI, 8DO, 8AI

XYR3013: 8DI, 8DO, 8AO

Typical applications

Expansion I/O for XYR3000 wireless units – up to 31 units can be connected to each wireless unit via RS485.

Serial I/O multiplexer – transfer I/O via RS485 – up to 32 units per multi-drop link.

Expansion I/O for Modbus devices – up to 31 units can be connected to each Modbus master via RS485.

Features

- Multi I/O channels - monitoring and control functions.
- Connected via RS485 multi-drop.
- Selectable communications via WIB-net or Modbus protocol (both RTU and ASCII formats).
- Sensor signals connected at one module (input signals) are transmitted to another module where the signals are re-created as output signals, or passed via serial or Ethernet data bus to a host device such as a PLC or SCADA system.
- Connect to XYR3000 wireless I/O units for I/O expansion – up to 31 serial addresses per wireless unit.
- Connect XYR3011, 3012, and 3013 units together to form a serial multi-drop I/O system - up to 32 serial addresses per multi-drop link – no Master device is required to control communications.
- Connect up to 99 XYR3011, 3012, 3013 units as multi-drop Modbus I/O (RS485 extenders/isolators required for more than 31 units per single multi-drop length).
- RS485 multi-drop up to 2 km (1 mile) depending on installation environment.
- Three I/O versions available.
- WIB-net intelligent wireless protocol; Peer-to-peer communications; Exception reporting; Reliable self-checking messages. Any input on any unit can be linked to any output on any unit. Inputs can be linked to multiple outputs. Serial communications 9.6Kb/s.

- Alternate Modbus RTU or Modbus ASCII slave protocol, serial communications configurable up to 115.2Kb/s, 7 or 8 data bit format.

- External I/O plus internally calculated values – analog setpoint status, pulse rate and pulse total, power supply voltage, power supply alarm.

Inputs and Outputs

Digital Inputs

Suitable for voltage free contacts or NPN transistor, contact wetting current 5mA, inputs are surge protected type -11 up to 16 selectable I/O type -12 & -13 up to 8 selectable I/O.

Digital Outputs

FET outputs, 30VDC 200mA

type -11 up to 16 selectable I/O

type -12 & -13 up to 8 selectable I/O

Analog Inputs

“Floating” differential inputs; common mode voltage 27V, 24VDC for powering external loops provided; digital filtering 1 sec.

0-20mA/0-10V resolution 12 bit, accuracy 0.1%

type -12 8 input channels, selectable as 4 dual-terminal floating inputs or 8 single-terminal common inputs.

Analog Outputs

Selectable as current/voltage source or current sink to common; max loop voltage 27V; max loop resistance 1000 ohms; 0 – 20mA/ 0 – 10V; 12 bit, accuracy 0.1%

type -13 8 channels

Pulse Inputs

Specifications as per digital inputs Max pulse rate 1kHz; pulse width min 0.5ms

type -11 4 inputs (DIO1-4)

Pulse Outputs

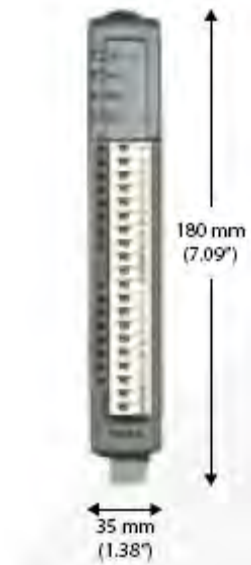
Specifications as per digital outputs Max pulse rate 15.625Hz; pulse width min 32ms type -11,-12,-13 8 outputs (DIO1-8)

XYR3000 I/O Extensions Specifications

	Model XYR3011, XYR3012, XYR3013
Temperature	-40 to +60 deg C (-40 to 140 deg F)
Humidity	0 – 99% RH
EMC	FCC Part 15, AS3548, 89/336/EEC
CSA	Class 1 Div 2 hazardous areas (USA/Canada)
Housing	DIN-rail High Density Thermo-plastic Case Removable terminals up to 12 gauge [2.5 sqmm]
Dimensions	150 x 180 x 35mm (5.91 x 7.09 x 1.38 inches)
LED Indication	For power supply, processor OK, serial TX and RX, Digital I/O
Serial Port	RS485 serial port configurable up to 115.2Kb/s, 7/8 data bits, n/e/o parity, 1 / 2 stopbits RS232 configuration port 9pin DB9 female connector, 9.6Kb/s, 8/n/1 RS485 max cable distance 2000 m terminal connections
Power Supply	10.8 - 30VDC, over-voltage and reverse power protected Internal monitoring of supply voltage. These values may be transmitted to remote modules for monitoring. An internal DC/DC converter provides 24VDC, 250mA for XYR3012 model, 20VDC, 160mA for XYR3013, for analog loop supply.

XYR3000 I/O Extensions

Dimensions



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